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ABSTRACT

This volume presents 14 pamphlets in the New Dimensions in Higher Education series, first developed by the Department of Health, Education and Welfare during the 1960's. The essays are prefaced with a discussion of the need for involvement of students in the educational process, the role of teachers in the function of the university, and the goals of a university education. Topics of the essay include: independent study, effectiveness in teaching, the experimental college, standards, approaches to teaching, study abroad, quality credit systems, curriculum flexibility, and teacher training. (MJM)

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STUDENT INVOLVEMENT AND THE UNIVERSITY

Compiled by
WINSLOW R. HATCH

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STUDENT INVOLVEMENT AND THE UNIVERSITY

By Winslow K. Hatch

The measure of the success of college teachers, irrespective of where they are teaching or what they are teaching, has to be the degree to which they involve their students in their education. This is true because until the student is involved he is not learning. A student, in a sense, cannot be taught; he can only learn and he learns by his own act. It should also be clear that a student cannot be given an education. Equally critical is the way the student is involved. If he is not psychologically and intellectually involved if his critical and creative faculties are not called into play and he is not made to take the intellectual initiative and show intellectual responsibility, his is certainly not a higher education.

Idea of a University¹

Irrespective of what else it is a university (is) "a place of inquiry."² The importance of inquiry was put very simply by a wise and perceptive colleague.³ "After 35 years I think I know what a university is. It is the place where one learns to ask questions." If a college's or university's students are not asking questions and examining the premises and stereotypes to which they are exposed the college or university has failed in its principal mission.⁴ The importance of inquiry on the part of the faculty is such that in a "UNESCO study of university reform in Central America"⁵ its central conclusion was "where the universities are failing they are failing because they do not appreciate how important inquiry is to a university."

Another useful phrase in describing a university is "community of scholars." When university teachers are not inquiring in some serious way and are not involving their students in some kind of inquiry, "joint inquiry," or "common inquiry," or "discovery,"⁶ or "problem-oriented" instruction,⁷ they are really little more than animated textbooks. To the extent they are, they are not a part of a "community of scholars." When students simply memorize what they are told or read and no more, they are not a part of a "community of

scholars" or in a way to become such.

In the past 10 years, I have drawn heavily on my experimentation as a teacher at the University of California, Santa Barbara, many aspects of which have been reported in INVOLVING COLLEGE AND UNIVERSITY TEACHING. The experimentation covered a twelve-year period. The scale of the program is still today the fact that so were teaching about 100 students a year, mostly students a year; all experimentally. Despite the numbers involved, there was a real bond between the students and the staff because when the staff threw away its notes, manuals, and comfortable ways and the students were asked to break with the routines and spoon-feeding to which they had become accustomed, both were vulnerable and both were scared. But they worked together and learned together and discovered a lot of things they had not known before, not the least of which was their self-respect.

The purpose of this experimentation was to get our students to come alive to begin to think and then to think better and more. The idea was to involve the student psychologically and intellectually in his own education. To do this, a problem approach was used. The fact that the students had a hand in shaping these problems made them theirs. The fact that they led to some very exciting ideas gave them reach and importance. The students had to read and think; had to think and look and think again. They also had to talk and think. They had to do this because, while they were shown how to state a problem and how to analyze it, they were not told what to read or what to read for, nor that it should be relevant to the problem. They had to rely on their own resources, which, to their surprise, proved quite adequate. They had to read before the lectures in order to understand them and enjoy them. Those who came prepared found them exciting. They had to read before they started looking, they had to ask "What am I looking for?" They came early and worked with an intensity that caused them to cover more ground than when they had been given directions. In the conferences, they had to talk and think if they were to develop plausible hypotheses and to settle on one they found convincing. This was thinking. It was also involved and represented a real commitment to their learning. Others have had the same aspirations but few have achieved the intensity we did in our experimentation. Actually, the course was so managed that we could start an experiment in one hour, test it,

abandon it or refine it in the next, and keep doing all day and all semester. These were long days because the students wanted the staff with them in the evenings to show them to the other students who were just going to college. Furthermore, two experiments were run concurrently: in two sections of 200 each. I, the teacher, learned with the first section and practiced what I learned in the second. This was repeated each semester. All this was possible, I suppose, because I was the division's administrative officer and each change or new departure got instant approval.

The diversity of the teaching and learning experiences was as great as their intensity because we met in four kinds of learning situations: large group meetings or lectures, conferences, or dialogues, laboratories or more accurately, research laboratories, where discoveries were made by the students. The examinations were also used as teaching and learning devices. These examinations required the students to think, to identify and define problems, and to set parameters around them, to marshal the relevant information known to them and, finally, to interpret it. It took days to construct such examinations, and careful reading and evaluation of the students' responses. . . but it enabled the staff to determine who could think and how well. The examinations were enough of a challenge and sufficiently unique and light-hearted in their phrasing that the students asked for copies to show their parents and their friends.

Four hundred and fifty students divided by fifteen, the number in our conferences, meant a lot of graduate teaching assistants for which I was the model; a model that was challenged by the assistants and by the students.

Man--and this is a big part of education's problem--has a fantastic capacity to obfuscate. For example, in the following articles I would seem to be talking about six different things or (if we did some lumping) four. Actually, I am talking about one: the need to involve students in their learning, the need to have students come alive and begin to think and hence begin to learn.

The articles (all of which are reprinted here from the series New Dimensions in Higher Education) were "Independent Study," "Effectiveness in Teaching," "The Experimental College," "What Standards Do We Raise?," "Approach to Independent Study," and "Approach to Teaching." Let me illustrate my obfuscation using the above titles, all of which I chose.

Today, it is different for this is (or appears to be) the age of involvement. Anford¹⁰ says "the involvement of the student in the educational process...reflects the recent trend on the campus...even the more conservative side of the campus, in the engineering and science schools...a mild revolution is in process." The degree and nature of this involvement is to be seen in the types of programs described below.

I. First, there are the more traditional approaches where, using lectures, seminars, laboratories, and field trips, they are doing something like we did at Washington State University. Many do not know of our experimentation, but a surprising number do.

II. Then, there are the problem-oriented or project approaches. These are peculiarly attractive to professional schools, to engineering colleges, schools of business, and law schools. In dental education the leadership seems to come out of Guatemala.

III. There is a new and very successful brand technical education coming up to us from Costa Rica. This is better, generally, than anything we have, but it takes great dedication, ingenuity, and a new feel for what is needed.

IV. There are the ecologically-oriented programs; scores of them. It is not surprising that there are so many of them because there has been a national study of the need.

"The Universities and Environmental Quality, Commitment to Problem-Focused Education," John C. Steinhart and Stacie Cherneck, A report to the President's Environmental Quality Council, Executive Office of the President, Office of Science and Technology.

V. Another language used to describe programs of involvement is Community Involvement. Here the community could be Atlanta, the Puerto Rican neighborhoods of New York City and Long Island Sound or, as we have suggested, it could be ecological in its orientation as in Oregon, Washington State (Western Washington College), California (San José State), Arizona (Prescott College) or Wisconsin at Green Bay, Pennsylvania (Clarion State College), etc.

VI. The other major thrust, which has almost as many different aspects as it has programs, is that of the Campus Without Walls of Samuel Baskin. This is a major operation and has even gone international. These programs are located in Chinatowns, Negro ghettos, on Indian reservations, in Appalachia, etc.; any place

where society is limiting. They are also found in under-developed countries and in the affluent suburbs where the problems are, perhaps, even more critical. So far as minority education is concerned, the best models appear to be in Ecuador where the Otavalo Indian has pulled himself up by his own bootstraps. Poverty breeds ingenuity and here, out of their poverty and remoteness, they have put together some remarkable educational projects. A proud people, they can be prouder still because they did it pretty much by themselves.

VII. The involvement in some colleges (such as UNW and the Washington International College and others) is such that the students "contract" to undertake a course of study wherein, if the college is not to be supported by the college, this support takes the form of a contract to supply the requisite expertise, which in the second instance at least is drawn from the area served by the college.

[illegible]

When I wrote "Independent Study" in 1961, it was the first time I wrote that word at all. By the time I wrote the "National Independent Study" in 1967, I had discovered that the nature of the study was at least as important as its independence; that independent study, if it was had, was bad. Good study required critical intellectual involvement.

In the second article it is not surprising that I, along with many others, found problem-oriented teaching the most effective way to involve students and, hence, to improve their learning. I was on target here.

When the title "The Experimental College" (1960) was chosen it was because most of the colleges studied were experimenting with teaching. This piece was really not so much a description of this type of college as it was a study of the role and place of inquiry

in college teaching. I should have made this clear.

When later I looked in another article "What Standards Do We Envisage?", I was reminded of the fact that educators appeared to be dashing off in all directions after all kinds of objectives without giving much thought as to what constitutes first order and second order purposes or needs. The research that seemed to speak to this point best was that of Stanford, Freedman, and Heist¹¹ for they were saying that the quality of an institution's program--its productivity--was measured by the intellectual initiative and responsibility, the critical and original thinking, and the sense of social awareness of its students. I was impressed because these were the qualities found in the students in our experimental teaching. The fact that three schools had reached this conclusion separately was impressive. But few were impressed enough to do anything about their teaching.

To provide a broader context and to demonstrate that education's problems have been looked at from several points of view and through the eyes of some very keen observers, eight more papers (also appearing in the New Dimensions series), written by eight different authors have been provided.

In "Impact of College," Freedman, (1960) examines a seven-year study made of the learning experiences of students at Vassar. Given the lack of student involvement in most classrooms, it is not surprising that he should find that much if not most of the students' learning occurred outside the classroom. The author describes at length where and when students learn; where and when they become involved.

"Management of Learning," E. L. Parvey, 1960. This study examines what the author believes to be a cardinal tenet of administration--namely the administrator's responsibility to manage the students' learning well. Parvey's analysis and conclusion has not been seriously examined by administrators but they may have to come to it if they are not to be entirely ignored by students.

"Study Abroad," Irwin Abrams, 1960. His message is that it is not enough that it be conducted abroad (with all of its advantages) but that the study can be a splendid educational experience or an elegant way to avoid learning, misuse leisure, and reinforce one's prejudices. Unless the student has a working knowledge of a foreign language and is somehow really involved in the foreign culture/s, he may acquire more misinformation than good and habits that, in our

affluent society, could only add to his and society's miseries. An escape is not what we are looking for - but involvement.

"Quest for Quality," by Samuel Haskin, 1966. The quality of the educational experience, is, in a sense, the object of all the studies made and reported in the New Dimensions series. This quality is manifested in many things. The problem is that these many elements are viewed by many as being of equal importance. This is of course not true. Of transcendent importance is the degree and nature of the student's involvement, because until he is involved, nothing is learned and if nothing is learned, nothing else matters. Obvious as this is, it is still either overlooked, forgotten, or swept under the rug.

"Advanced Standing," Shirley Kadeloff, 1961. Students who qualify for advanced standing are obviously more involved than most. Anything that does this is desirable. The popularity of advanced standing programs is a measure of the students' need sense.

"The Credit System," Barbara Lewis, 1961. In criticizing the credit system, one ought for fairness to have an alternative suggested alternative. We do. The alternative is a kind of teaching in which the student is critically involved. When the student resolves a real problem, successfully analyzes a case study, or makes critical and defending inquiries, he succeeds. He can even be given problems or tasks that require his use of critical and creative skills, his taking the intellectual initiative, and his demonstrating desirable behavioral responses. If he completes such problems or tasks satisfactorily he has obviously succeeded, irrespective of where or how he did it, how quickly or slowly he did it. Furthermore, anyone interested in him can tell precisely what he can do. Finally, students involved in serious inquiries do not need the policies implicit in credits, hours, and grades nor the phony endorsements they sometimes represent.

"Flexibility in the Undergraduate Curriculum," Charles Cole, 1962. This study illuminates the theme of this book because it concludes that the curriculum is good to the extent it provides, implicitly or explicitly, for flexibility in teaching and learning. If teaching is to involve all or most of the students in any class or project it has obviously got to be flexible. It also has to be challenging if it is to get the students to work up to their capacities and close to their work ceilings.

"Talent and Tomorrow's Teachers," Lanora Lewis, 1963. In this study of Teacher Education, some help is given as to what talents are required in elementary and secondary school teachers to make them more effective than their predecessors. Nobody needs to tell elementary school teachers that involvement is the name of the game, but secondary school teachers will take some telling because they, along with college teachers, appear to be confused. As spelled out in these pages, involvement does not mean a cheap trip, attention getters, or time employers. It means getting students to any way to think, learn, or respond and not just memorize your words or do what your age or convention requires. If your students do not set themselves harder tasks than you devise and read more and think more about what they and you are doing, then you may be sure you have failed. This study also describes those procedures that would produce a new and better breed of teacher--and not just one who has effort with his students.

While I and my colleagues may not always have gotten our message across, may even have confused the issue, we hope we have made ourselves understood in this volume. Involvement is and was the key. Viewing all our writing in retrospect and given some of the qualifications introduced, we may have been more consistent than we knew. The importance of involvement as qualified in these pages can hardly be exaggerated, for once this is achieved, students will get an education in spite of their teachers if they have to. Furthermore, with this commitment the greatest, but least used, resource in education is harnessed.

The themes outlined in the first paragraphs of the introduction are promises that were developed at Washington State University in the '40s and '50's, published in Improving College and University Teaching in the '50's and examined in the New Dimensions series throughout the '60's. What emerges is a widely generalizable hypothesis or series of hypotheses and a whole series of applications to different learning, and teaching situations, to counseling, to extra-curricular activities, and even to administrative theory and practice. We are, then, talking about something that has undergone more than thirty years of development. In 1969-70 an assessment was made of a conference that bridged the 1940's with the present. As such, it constitutes a good summary.

Its relevant conclusions were: That "much that is happening in campus unrest does not look to the causes of unrest. . . a university can be expected to eradicate. . . (a university) cannot accept the responsibility for all of society's ills. . . As regards its own malfunctioning, it can. . . 12

The cause of this malfunction appears to be "the learning-living-teaching (the student) does not do or does not get."

Speaking to this point Axelrod¹¹ says the new patterns in undergraduate education are

a. Teachers who "become learners and students who become, in a sense, teachers."

b. A "view of teaching and learning as being an engagement in joint inquiry."

c. That the prux of the process is for students to learn "how to teach each other and how to learn from each other, from books, from experience, from their teachers, or from anything."¹⁴

d. That a new principle of unity is emerging in which general and specialized education, liberal and professional curricula, transfer and terminal programs are fused."¹⁵

Our "students also feel that they have not been involved in their education; they have not been consulted in advance or brought to the point where they can be so involved."¹⁶

A strategy for attacking the causes of education's malfunctioning was included in this "assessment and projection." It consisted of:
(i) The need to face up to "the facts of academic life" such as the fallacies:

(a) "That there is 'nothing wrong with this institution that a million dollars would not cure.'" (What is lacking and is more critical is a lack of ideas, of good reasons for change and/or a predisposition to change. Money is an excuse.)

(b) "That the faculty should, or even can be involved massively in change." (Actually, it is virtually impossible to involve a whole faculty because administrators and teachers with the requisite scholarship, ingenuity, and ability to live with and thrive on change are few and far between.)

(c) "That a whole institution or college can be changed by a fiat, or a year's work. "University reform" and "institutional renewal" are phrases that encourage false hopes. At least I have never seen a whole university reformed or a whole college renewed.

(2) The need to examine one's premises more critically than most do. Failing in this--and this is where most fail--little is really changed and that which is changed is so unimportant that one can fairly question whether it was really worth the effort. This volume, in a sense, is an effort to supply sufficient premises.

(3) The need to make the reform, renewal, or change microcosmic. The need to be selective in identifying the staff to make the effort means a relatively small number will be involved; hence the micro. It is possible in the sense that when one really involves students in their learning, usually using some form of inquiry, this of and by itself makes a university a university and makes higher education higher.

By way of synthesis it has been our experience that the failure of conventional reform can almost always be traced to one or more of the following: The fact that they almost never:

"(1) genuinely examined their premises--for most, any set of objectives is sacred and would not be served.

"(2) genuinely examined any experience but their own. This is part ignorance and part conceit.

"(3) inquired themselves about the long history of innovation--at least in their field. They, accordingly, repeat its mistakes.

"(4) identified their situational stereotypes, be they those of professional, technical, vocational, general, or liberal education, or the stereotypes of the teachers or of the researchers in these fields. Instead of realizing that they are all to blame, they spend most of their time pointing their fingers at each other.

"(5) know when to stop talking and begin to innovate."

For these reasons we recommended the use of a locus of change--change-agent mechanism or of a special kind of workshop and the use of a multiplier factor.

The above are described in a report to the Organization of American States.¹⁷

"The Locus of Change--Change-Agent Mechanism"

"This approach brings about improvement and, hence, change in the shortest possible time and under the most favorable circumstances. Involved is the identification of a place or places thought to have promise and the marshaling of the most effective

teachers and administrators. The place, typically, is a college or a subdivision. The program it shapes is its own but it may be used as a pilot for a group of colleges acting in consort or for a university. The change agents are drawn from the pilot institution, from the cooperating institutions, from the university at large, or from the talent available in the state or region.

"The first step in identifying promising loci of change is to establish criteria of the productivity of an institution (See Heist's criteria, F.M. 4.) A particularly advantageous situation exists when a new college or program is being launched. In this instance one can use the criteria employed in selecting the college to choose the change-agents because they too must be productive.

"One does not identify loci of change just to identify them, but to improve them. Actually, selection or recognition has this effect: for if outsiders deem it promising, it tends to become so. Its good teachers take heart and try harder. Those who were looking toward greener pastures decide to give it another chance. Actually mediocrity thrives on neglect and is less aggressive in the spotlight of attention. By selecting an institution, one selects a community, and it can be educated to the point where it can supply more of the institution's needs, profit from its association, and enhance the institution thereby. Once identified, a promising institution can be supplied with state-of-the-art studies and other information and be made more promising. Sister-sister relationships between this and perhaps an even more promising institution work to their mutual benefit. Again, recognition is an antidote for apathy, the principal bane of educational improvement. Finally, money usually becomes available to promising institutions."

"The second step is to assemble information on the change agents in an institution, state, or region who have been peculiarly successful in introducing better programs. There are few institutions that do not have some, and as we have noted earlier you do not need many. Typically they are isolated, unrecognized, and receive little encouragement; particularly administrative encouragement. To support excellent teachers brings down the wrath of the mediocre who in their numbers make it hard for the dean. When recognition comes to good teachers at the instance of informed and prestigious outsiders it's a completely new ball game. When, as is the case with this approach, they are joined by other good teachers from

their own and other institutions, their best instincts are reinforced. Recreation and encouragement along with a challenging set of problems presents an atmosphere a lot more than just benefit ratio is favorable because one gets so much for his money when it is spent this way. The way to waste money is to spend it on the mediocres because they are so many and their contribution, if any, is so modest. Finally, this is one of the few instances in which there are professional advantages for the change agent and committed teacher. They may even balance out his risks. They exist in the fact that if he does something noteworthy in a place that has attracted attention but the institution fails him, the change agent can escape to a college that is looking for someone like him. In this approach there is a better future in reform than in the status quo. There is even the possibility of one's building an extra-institutional, even an extra-national reputation."

"Once good places and people have been identified, arrangements can be made (1) by the loci for change with the institutions employing the change agents they need. The release by the change agent's institution would be for a year at a time. His salary would be paid by the locus of change. The mix of talents and experience assembled in the locus of change would be very valuable and one could be sure that the program that emerged was not parochial. The loan might desirably be for two years because then the outside change agents would have a chance to teach in the program they design. Knowing this, the change agent on loan would not foist ideas or practices on the locus college that he was not prepared to bet his teaching reputation on. (2) If mistakes were made he would be there to see what they were. Everybody, including the students, would profit from such an arrangement. The educational world outside the operation described could profit because in the cadre of change agents built up and tested on site after site, it would have a resource on which it could call with confidence."

"The locus of change-change agent approach can be employed not only by single institutions, by all kinds of institutional groupings, but even by national and international agencies."

The Workshop as an Instrument of Improvement and Change

"Workshops of a very special kind can be used to bring a faculty to the point where it in fact improves its practices. To

do this they have to be conducted with the least lost motion and, hence, with the least expenditure of effort and money. In these workshops one has to be clear as to what is to be changed and what is to be changed first. Papering over the cracks in an institution is a waste of time and money. The important thing, of course, is to involve the students in ways and to a degree that they are not now involved and improve thereby the learning experiences of students both on and off the campus, in and out of classrooms. In describing these workshops it should be noted that that which precedes them, is inserted between them, and follows them is more important than what happens in them. The chronology of activities includes:"

"(1) The Selection of Participants. This is critical because in a university or college, as in a democracy, if those individuals who can move them and improve them are not given a chance to do it, the theoretical advantages in democratic societies are canceled out by an autocracy of incompetence, ignorance, and prejudice."

"Useful is a technique of self-selection in which the response is to an invitation to join in an innovative experiment whose premises have been carefully developed. These responses are very revealing and help to identify the effective individuals."

"(2) Workshop One. Here the chosen participants are taken through an analysis of what research and experience indicates to be the role of an effective teacher. In support, the participants are provided with explicit models of good teaching. Finally, they are provided with state-of-the-art studies that deal with strategies as well as theory. Out of this the students are asked to shape a program that reflects their ideas as to how they could be most effective in the field of their subject-matter confidence and at the level where they feel most comfortable."

"(3) Workshop Two. This group will consist of those who, on the basis of the projects submitted in One, seem most promising. In this workshop the participants will (a) state their premises in explicit language; (b) describe in equally explicit language how they propose to implement their premises; (c) Materials will then be supplied relative to their premises and plans; (d) Given the tentative course outlines of the students, they will next be asked to describe the kind of curriculum they envisage."

"(4) Workshop Three is for the best of Two's graduates and they now join the administrators of the institution chosen for the pilot program and together they design the program to be launched, taking no longer than 1-2 months. Provision is also made for observers in the pilot program whose task it is to enhance its replicability."

Throughout the program it is understood that all those trained--usually at someone else's expense--will in turn train others and these in turn train still more. Thus provision is made for building a critical mass in the faculty by incorporating what has come to be known as the multiplier principle."

The Use of a Multiplier Factor

"The last thing to build into one's strategy is the multiplier principle which is a contractual arrangement entered into by the change agents to the effect that they will each instruct 10 members of the faculty or 10 graduate students or others who might become members, the change agents choosing those with whom they think they can be most effective. Those so taught at the institution's expense contract to do likewise. In this way in 2-3 years time a critical mass of competently trained teachers is reached."

Footnotes

¹ See W. K. Hatch, "General Education and University Reform," *Improving College and University Teaching*, Autumn 1964.

² See W. R. Hatch, "Inquiry into Inquiry," *Improving College and University Teaching*, Autumn 1964, also "What Standards Do We Raise," *New Dimensions in Higher Education*, Number 12, 1964.

³ George Coe, Professor of Education, Washington State Univ.

⁴ Heist, Paul A.; McConnell, T. R.; Matslor, Frank; and Williams, Phoebe, "Personality and Scholarship--Distinguishing Characteristics of High Ability Students Who Choose Institutions High in the Production of Future Scholars," *Science*, Vol. 133, No. 3450, Feb. 10, 1961, p 362-367. (Research at the Center for the Study of Higher Education.)

⁵ Ibid, No. 1 above.

⁶ Bruner, J. T., "The Process of Learning," Cambridge, Mass.: Harvard, 1960. Gagne, Robert M., "Guided Discovery," "Principles of Learning," *Achieve Learning Objectives*, 1963, Otis E. Lancaster, University Park, Pa. The Pennsylvania State University, 1963.

⁷ McKeachie, Wilbert J., "Recitation and Discussion," *Achieve Learning Objectives*, 1963, Otis E. Lancaster, University Park, Pa. The Pennsylvania State University, 1963.

⁸ Teaching an Integrated Course in the Biological Sciences, Spring, 1953. The Socratic Method in Modern Dress, Summer, 1957. Inquiry into Inquiry, Autumn, 1957. The Lecture, Winter, 1958. The Laboratory, Spring, 1958. The Dialogue, Summer, 1958. The Examination, Autumn, 1958.

⁹ This was the research on Personality Development by Sanford, Friedman, et al and on Institutional Productivity by Heist. Later, both schools got together on what was called an Omnibus Personality Inventory.

¹⁰ T. P. Torda, Director of the Education and Experience in Engineering Program (E3) at the Illinois Institute of Technology in his successful proposal to the National Science Foundation. It is a major project.

¹¹ Ibid, No. 9 above.

¹² "Confrontations, An Assessment and Projection, Proceedings of the 1969 Pacific Northwest Conference on Higher Education, Oregon State University Press.

¹³ Joseph Axelrod, "New Patterns in Undergraduate Education: Emerging Curriculum Models for the American College," *New Dimensions*, No. 15.

¹⁴ Quotes Harold Taylor.

¹⁵ Ibid, No. 9 above.

¹⁶ Ibid, No. 7 above.

¹⁷ Report to the Organization of American States in connection with its Programa Regional de Desarrollo Educativo, Washington, D.C., 1971.

NEW DIMENSIONS
in Higher Education

Number 1

Independent Study

by

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Clearinghouse of Studies on Higher Education
Division of Higher Education

**U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE**
ABRAHAM RIBICOFF, Secretary

Office of Education
STERLING M. McMURRIN, Commissioner

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FOREWORD

WITH THIS PUBLICATION the Division of Higher Education introduces a series under the general title, "New Dimensions in Higher Education." Documents in this series are prepared by the staff and consultants of the Programs Branch of the Division of Higher Education with the help of persons in the Office of Education, in other agencies of Government, in national and regional organizations, and on college and university faculties. Each paper draws upon a common resource: the Division's Clearinghouse of Studies on Higher Education.

The series "New Dimensions in Higher Education" grows out of a concern for the problems facing the Nation's colleges and universities. It proposes to help meet these problems by presenting the findings of research and experience bearing upon them. Implicit is the assumption that such research and experience are basic to the exercise of institutional leadership.

Readers are urged to contribute results of their own studies and experience to augment material now available for review. Their advice is also solicited in order that this effort to assist in the study and improvement of American higher education will be as sound as possible.

Each publication in the series will deal with a particular educational problem. It will attempt to present evidence assembled to describe practices which appear promising, and to direct the reader to useful sources of additional information and counsel.

This initial publication is concerned with independent study and its implications for increasing educational effectiveness. Institutions with the greatest experience in this type of study are deepening and expanding their programs. The history of this experimentation suggests that greater reliance can be placed on well-planned independent study throughout the college years for average as well as superior students. Independent study programs hold sufficient promise to warrant the careful attention of all persons concerned with increasing the effectiveness of higher education.

Homer D. Babbidge, Jr., Assistant Commissioner
for Higher Education.

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Programs Branch.

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I. INTRODUCTION

HONORS PROGRAMS are called independent study programs on some campuses and this designation of them is recommended in four early surveys¹ of these programs and in the most recent (1957) and most comprehensive.² This seems reasonable because, more than anything else, independent study seems to characterize "honors" work. As a matter of fact, all the aforementioned surveys identify honors with independent study. Of late there has been much experimentation with independent study quite outside of "honors" programs. In addition, there are other programs and practices that advance the purposes of independent study but are not always identified with it. Included are Socratic, problem, and case methods of instruction, student research, and administrative and curricular practices that introduce greater flexibility into academic programs and so provide an opportunity for independent study. The concern of this paper is with the phenomenon of independent study in its several manifestations. Whether these manifestations or forms of independent study are the product of convergent, divergent, or parallel evolution is an interesting question but one that is best left to the educational historian. For some, independent study is individual study; for others it is self-directed study; for still others, it is study done outside of organized courses and/or the usual academic setting. In some instances the term is reserved for work done off the campus. While independent study may have these attributes, the essential element would seem to be the independence of student learning.

The activities identified in this paper as manifestations of independent study might be classified according to the primary purpose they advance, the student population they serve, or the curricula or pedagogical processes employed. This might improve our understanding of these programs

¹"Honors Courses in Colleges and Universities," by Mary Barbara Taylor. Unpublished M.A. thesis, Los Angeles, California, Occidental College, 1930.

²"Honors Work in Institutions Accredited by the American Association of Universities," by Mary Barbara Taylor and J. H. Sinclair. *School and Society*, Vol. XXXIII, Feb. 14, 1931.

"Honors Work and the College Library: A Consideration of the Library Implications of Independent Study Programs," *The Library Quarterly*, Vol. XII, April 1942.

"Honors Courses in American Colleges and Universities," by Frank Aydelotte, *Bulletin of the National Research Council*, Vol. 7, Part 4, Jan. 1924.

³*The Independent Study Program in the United States*, A report on an Undergraduate Instructional Method, by the Committee of Educational Inquiry, College of Wooster, Wooster, Ohio (Robert H. Bonthius, F. James Davis, I. Garber Drushal, Frances V. Guille, and Warren P. Spencer). New York: Columbia University Press, 1957.

but not of independent study. To understand independent study one must see it as a whole. To do this one must identify the many "bits" of experience and fuse them into a composite that does not exist today in any program or category. Our disposition, accordingly, is not to categorize independent study beyond recognizing "honors," "independent study," and "flexibility" programs--all in quotation marks. This we do reluctantly and only in the interest of good reporting. If an institution considers its program one in "honors," it is so recognized. If it describes its program as "independent study," this phrase is used. Independent study without quotation marks is reserved for the inclusive phenomenon.

The almost universal complaint of faculties and students caught up in independent study is that the program they know, featuring some one purpose, does not achieve the "plus values" they expected of it. It does not do this because no one program or category has seriously sought to achieve these values. Actually, there is some question as to whether a composite of the several programs has purposes which, if achieved, would realize these values. Accordingly, the effort in this publication is to examine independent study in the mass and to try to find in the aggregate experience an adequate model.

The nomenclature employed in connection with independent study and honors programs is confused and confusing. Drushal and his collaborators wrestled with the problem for six pages and finally entitled their survey The Independent Study Program in the United States.³ Our use of the words independent study reflects our experience with independent study and honors programs, as we have come to know them through the operation of the U. S. Office of Education's Clearinghouse of Studies on Higher Education. Our particular concern with honors programs is the contribution they make to independent learning. With honors, independent study, or the other programs and practices identified in this paper, the criterion employed is that they be instruments of independent learning in an extraordinary sense. Excluded would be those programs, courses, and practices, irrespective of the name given them, which make only a casual or incidental contribution to independent study. Since some "courses" make greater use of independent study, hour for hour, than some so-called programs, it would seem a disservice to independent study to exclude courses. There is even reason to believe that some experimental courses may, at the moment, constitute the cutting edge of the independent study movement. Of the practices designed to advance independent study, there are, for example, Brooklyn College's exemption of Dean's List students from attendance regulations and the University of California's (Santa Barbara College) waiver of certain course requirements through special examination. These devices permit and encourage students to decide for themselves how their learning time may best be occupied.

³ Ibid.

Other practices, as described by Charles C. Cole, Jr.,⁴ include advanced placement which, at least in the case of Harvard, gives "leisure to the student in his fourth year to do whatever he wishes, to attend courses, to take an additional senior tutorial, to read on his own, or to take graduate work."⁵ Also cited by Cole are Harvard's course reduction for independent study; Reed's senior thesis for those who pass a special qualifying exam in their junior year; tutorial plans such as those at the University of Michigan, the University of Chicago, and Harvard; special courses for special students at the California Institute of Technology, San Francisco State College, Hiram College, and many others.⁶ "The scholars of the house plan, small seminars for honors candidates in their major fields of study, sophomore seminars in the residential colleges which may be taken in lieu of a regular lecture class, and the directed studies program which is Yale's brand of general education and which is limited to the top quarter of the student body,"⁷ all provide "flexibility" and an opportunity for independent study. Special devices available for upperclassmen, such as Stanford's senior colloquia, Reed's senior symposium, and the University of Chicago's preceptorials in some third year courses are other ways in which the purposes of independent study are met.

While in all of these programs and practices the "focus [is] upon the individual instead of the group [the relationship] between teacher and student [need not always be] a person-to-person [one]."⁸

⁴ Flexibility in the Undergraduate Curriculum, A report to the Carnegie Corporation, by Charles C. Cole, Jr., Lafayette College, 1958.

⁵ *Ibid.*, p. 14.

⁶ University of Michigan, Oberlin, University of Chicago, Massachusetts Institute of Technology, and Stanford.

⁷ Flexibility in the Undergraduate Curriculum, op. cit., p. 31.

⁸ "The Honors Program," memorandum dated March 28, 1958, to the Faculty from W. Altus, Chairman of the Committee on Educational Policy, University of California (Santa Barbara College).

II. HONORS PROGRAMS

WHILE THERE APPEARS to be a very general disposition across the country to be more attentive to the requirements of the gifted student there also seems to be a trend toward having this student share a considerable part of his education with those less endowed. That such an accommodation can be made and with no disadvantage to the superior student (or to the average student) is indicated by Santa Barbara's experience with its honors-general education program and Washington State University's experimentation with at least one of its "integrated courses."⁹ This has been the experience of Boston College¹⁰ as well and squares with the findings of projects 1 and 2 of the University of Michigan's Instructional Efficiency Research Program.¹¹ Actually, this experimentation seems to be the dynamic front in what is a very dynamic movement.

Honors programs include curricula for "gifted" students (University of Arkansas), for "superior," and "good" students (University of Kansas), and for "above average" students (University of Texas). If any trend is discernible, both in the mass and on those campuses that have had the longest experience with honors, it is to broaden the program, following through some such sequence as the above. The estimate of the authors of the Wooster study is that "not nearly so many voluntary programs announce specific grade requirements in order to elect independent study [honors] as the Umstattd report (1935) implies. This may indicate a growing conviction of the value of independent study for the more ordinary student. Certainly such a conviction developed over the years in a number of the twenty institutions which are

⁹ "Teaching an Integrated Course in the Biological Sciences," by W. R. Hatch and H. K. Buechner, *Improving College and University Teaching*, May 1953, pp. 3-11, and the following articles by W. R. Hatch from the same magazine: "The Socratic Method in Modern Dress," summer 1957, pp. 60-63; "Inquiry Into Inquiry," autumn, 1957, pp. 93-99; "The Laboratory," spring 1958, pp. 51-54; "When Students Play on the Team," spring 1958, pp. 49-50; "The 'Dialog'," summer 1958, pp. 73-82; "The Examination," autumn 1958, pp. 126-35; "The Lecture," winter 1958, pp. 21-25.

¹⁰ "Honors Program, College of Arts and Sciences," 1958, Boston College, p. 1.

¹¹ "Effects of Varying Degrees of Student Interaction and Student-Teacher Contact in College Courses," by Thomas S. Parsons and Warren A. Ketcham, University of Michigan; and Leslie R. Beach, Whitworth College, 1958, Instructional Research Program, Project 2, School of Education.

reported on in chapters two and three."¹² The same survey also reports that "several administrators expressed interest in further liberalization of independent study[honors]opportunities. Said one, 'we are also certain that independent study[honors]should be open to the average student.'¹³

According to the Wooster study, the change recommended most frequently by teachers and students in independent study programs is that the program be extended "to more undergraduates,"¹⁴ that more be done in "the first years."¹⁵

The tendency to broaden honors programs has been prompted by the discovery that:

- (a) Grade points were not necessarily good indicators of the students' ability to profit from such programs.
- (b) Not every superior student, as identified by his grade points, was interested in honors work. Brooklyn College in a Study on Superior Students identified as likely prospects for independent study (honors) programs, students whose qualifications were "intuitive perception, maturity of thinking, independence in thinking and working, and ability in expression." Their conclusion was that something "more than merely intellectual performance" was required,¹⁶ that "... the identification of the superior student--the student who has outstanding gifts of creativity, intellectual curiosity, originality, or research ability--remains a problem."¹⁷
- (c) Students electing honors programs as upperclassmen have been found to be poorly prepared for such work because their previous training lacked the necessary depth and/or breadth.
- (d) The passive role engendered by the conventional lecture, laboratory, and conference methods to which honor students were exposed as freshmen and sophomores made honors work difficult, irksome, or distasteful.

Another manifestation of the disposition to broaden or liberalize honors programs is the increasing concern shown for the background, the liberal-general education of honors students. This interest takes the form of revitalized liberal arts curricula, of programs in general honors (University of Colorado, et al.), and in the exploitation of general education programs when they are strong enough to support such a development. Such is the case at Florida State University, Santa Barbara College (University of California), the University of Arkansas, the University of Texas--where there is a "set" curriculum for freshmen and sophomores--and at Miami University in its "common" curriculum. If maximum provision is to be made for student communication, in independent or any study, some common curricular

¹² The Independent Study Program in the United States, op. cit. pp. 32-98.

¹³ Ibid., p. 65.

¹⁴ Ibid., p. 87.

¹⁵ Ibid., p. 90.

¹⁶ "Study on Superior Students, Part II," by Naphtali Lewis, 1957, Brooklyn College, p. 4.

¹⁷ "Study on Superior Students, Part I," by Naphtali Lewis, 1957, Brooklyn College, p. 5.

experience appears necessary. If students can communicate on many subjects, they can instruct each other in these subjects. Even in a common, prescribed curriculum the student's freedom of choice, if his study is "independent," is as great, if not greater, than that which is usually exercised in an elected curriculum. Where the student's inquiry is open-ended, his search is for ultimate explanations, for the basic ideas, which are rarely circumscribed by a course but lead out into other subject matter.

Prescription is not a foreign concept in independent study today, because one-half of the twenty schools studied by Drushal et al. indicate that theirs was a "required" program. Nor is it foreign to our political or educational tradition of freedom (and responsibility), for just as colleges and universities have the option, and the duty, of choosing how it is they mean to provide a higher education, so students have the privilege (whether they exercise it or not) of choosing the institution which they think or feel will best provide them with the education they need. When a student elects to enroll in an institution with a prescribed curriculum he, in effect, chooses such a program. Institutions that do not make clear choices but are all things to all students are in effect irresponsible, for they not only make it more difficult for students to exercise their freedom of choice but ask them to make decisions that they are unwilling or unable to make. Related to this problem is the question of whether credit should or should not be given for honors work. This is being resolved responsibly by giving credit and counting it as credit towards graduation.

While many of the new honors programs--for example, those at Indiana University, the University of Michigan, the University of Texas, the University of North Carolina, the University of Kansas, the University of Colorado and the State University of Iowa--have honors sections at the freshman and sophomore levels, Santa Barbara College insists that honor students take the same courses as their fellows, and usually in the same sections. While every effort is made to offer the gifted student the challenge of work commensurate with his ability "there is no intention to isolate the able student so completely as to deprive the general student body and faculty of his powers as a leavening agent In a general sense the honor student...studies the same material as the other students but in a more intensive or extensive fashion."¹⁸ Neither does honor standing carry with it exemptions from the requirements of a good general education and sound training in the major. "However, some of the general education requirements which are normally specified in terms of courses may be met, if the honor student so chooses, through examinations."¹⁹ In Boston College, honor students "are placed in special sections of required courses, to which sections are

¹⁸ "The Honors Program," op. cit.

¹⁹ Ibid., p. 2.

added some five to seven students of comparable ability so that the honor students will not be isolated ... [and] may serve as a leaven upon the remainder of the student body to stir them up to a struggle for intellectual excellence."²⁰

Honors programs have not only moved down into the sophomore and freshmen college years but also into the high school. Faculty members of the University of Colorado and MacMurray College, among others, are experimenting with high school honors programs and express satisfaction with the achievements made by the students.

²⁰ "Honors Program, College of Arts and Sciences," *op. cit.*, p. 1.

III. INDEPENDENT STUDY PROGRAMS

IN INDEPENDENT STUDY as with honors programs two principles have been affirmed and confirmed. (a) That independent study should be open to most, if not all students, and (b) that this type of study should begin in the freshman year.

The experience reported below has caused institutions interested in honors programs to look again at the preparation of those students in lower division programs and even in high school. It has also led those institutions to re-examine the teaching methods employed prior to and during honors work to determine whether they were too mechanical, the student's role too passive, and whether they were appropriate to institutions of higher education. Honors programs have, accordingly, begun to identify themselves more and more with the college's or the university's program and have begun to convert this program into something which not only supports honors work but reflects the purposes of higher education in more effective ways. The disenchantment of honors programs with elaborate course prerequisites, with credits and hours, and with current conceptions as to what constitutes optimal student loads, has likewise been transferred, in part, to the college's program.

In institutions that make independent study their unabashed concern, students are honored but the honor they are shown is the faculty's acceptance at face value of the student's presumed interest in acquiring a higher education.

As with honors programs, those schools with the greatest experience in independent study are broadening and deepening their experimentation. "An unexplored area of great interest would be an experiment designed to test the independent study method in a situation in which the student has all of his courses under this plan. This, however, raises many practical problems which seem to have no easy solution unless all courses open to members of a particular class, or even the whole college program, were to be given under independent study."²¹ Samuel Gould, former president of Antioch College, advocates replacing mere "schooling" with independent learning designed to develop creativity of mind. To do this he would treat all students as potentially outstanding in the hope of unearthing a few hidden

²¹ "Carleton Independent Study Experiment 1957-58," p. 3.

treasures and in the process stimulating the mass to greater achievement than it might otherwise attain."

Oberlin's observation is that "teaching by the experimental and control methods at the same time was cumbersome and tended to make for invidious comparisons of the two procedures among the students; whereas if the course were taught one way or the other, the students would simply accept the procedure as being the professor's way of teaching."²³ An independent study whole may not, however, be the sum of its parts; it could be more. It could also be less, not because of anything intrinsically wrong with independent learning, but because the greater academic dislocation could easily increase the amount of faculty resistance. On the other hand, if independent study were to become an academic way of life, it might be accepted as such.

In independent study, as with honors programs, the present disposition is to begin them in the freshman year. Antioch reports its experience as follows:

"Our evidence thus far would seem to indicate that contrary to the more general expectation . . . students at the first year level may be more ready to accept and accomplish independent study than the more mature upperclass students. There is a greater readiness on the part of the younger students to accept the newer teaching methods, partly because they have not been 'contaminated' on the college level by an additional two or three years of teacher-directed learning, and partly because college is supposed to be different."²⁴

Cole, who visited some 10 institutions, observes:

"A freshman comes to college full of enthusiasm, expecting something new and different. Frequently, his enthusiasm is dulled by class attendance, his love of learning diminished by the slow routinized pace he is forced to follow. Perhaps the strategy to try is to start with freshmen and give them independent study assignments before they get bogged down with formal course work. If it can be proved that independent work has merit for freshmen, then it can be applied at all levels."²⁵

While the New College Plan of Amherst, Smith, Mt. Holyoke, and the University of Massachusetts²⁶ cannot be evaluated as an extant program, its proponents propose to exploit Antioch's experience and to act on Cole's suggestion. "The New College curriculum is designed to establish a pattern of independent behavior by intensive training in it at the outset and to reinforce the habit of initiative thereafter by continuing to provide situations which call for it." Their reason, in their own words, for making

²³ "Breaking the Thought Barrier," by Samuel B. Gould, Journal of Higher Education, Vol. XXVI, No. 8, November 1955, pp. 401-07.

²⁴ "Report on Independent Studies Experiments at Oberlin College, 1957-58," p. 24.

²⁵ Letter from Samuel Baskin, Antioch College, to W. R. Hatch, 3/27/58.

²⁶ "Flexibility in the Undergraduate Curriculum," op. cit., p. 31.

²⁷ "The New College Plan: A Proposal for a Major Departure in Higher Education," by C. L. Barber, Amherst College; Donald Sheehan, Smith College; Stuart M. Stoke, Mount Holyoke College; and Shannon McCune, Chairman, University of Massachusetts, 1958.

independent study the central feature of their plan is that, "The most important contribution a college can make to its students is to develop in them a capacity to continue their education throughout their lives."⁷⁷ New College intends to develop this capacity by training students to educate themselves. "New College will aim to fit its students to master subjects, chiefly on their own initiative, by providing them with the necessary skills, resources, and intellectual stimulation."⁷⁸ It is hoped that by its emphasis upon independent learning New College may usher in a new academic way of life.

New College hopes to recruit better-than-average students for the start of its experiment, because a superior student body will make the initial experimentation easier. When the college has been established for a few years and when its accomplishments have been recognized, a more liberal admissions policy will be adopted. This fact is important--the proponents of the plan do not feel that average students cannot profit by independent study; they merely want to acquire sound footing and a certain amount of prestige before broadening their experimentation.

⁷⁷Ibid, p. 3.

⁷⁸Ibid, p. 2.

IV. THE INTEREST IN INDEPENDENT STUDY

THE INTEREST in independent study is evidenced by the following facts and developments: a survey conducted and a book written on the basis of its findings, a journal launched by a specially formed committee, a book-length series of articles written, identification of independent study by representatives of Ford and Carnegie as the most "significant development" in higher education, and eight of the first 52 cases in the CASE BOOK dealing with the phenomenon.

An indication of the interest in independent study, apart from programs and courses, is to be seen in the facts that:

- (1) A survey has been made and a book written, The Independent Study Program in the United States, by Robert H. Bonthius, E. James Davis, J. Garber Drushal, Frances V. Guille, and Warren P. Spencer.
- (2) An "Inter-University Committee on the Superior Student" (the I.C.S.S.) has been organized. The director of the I.C.S.S. is J. W. Cohen, Hellems 112, University of Colorado, Boulder, Colorado.
- (3) A journal, "The Superior Student," has been launched by the I.C.S.S.
- (4) A book-length series of articles has been written: "Inquiry Into Inquiry," "The Socratic Method in Modern Dress," et seq., Improving College and University Teaching, May 1953 to winter 1958.
- (5) As early as the spring of 1958 both the Ford and the Carnegie Foundations--at least one representative--identified independent study as the most "significant development" in higher education. The Fund for the Advancement of Education reported the experimentation done on independent study in "Better Utilization of Teaching Resources."
- (6) Of 52 cases selected for publication in the CASE BOOK and in SPECIAL REPORTS during the period from November 1957 to December 1958, eight deal with some aspect of independent study.

V. THE SCOPE OF INDEPENDENT STUDY

IN THE STATISTICS compiled by Bonthius, Davis, Drushal, Guille, and Spencer²⁵ referred to earlier, one gets some idea of the dimensions of the "movement" in the fall of 1957. In an analysis of 1,086 programs of study in 4-year colleges and universities, they identified 334 independent study programs in 286 institutions. Of the reports received by the Clearinghouse of Studies on Higher Education, 46 deal with independent study. These studies (A in the listing) are reports of substantial experimental efforts. In addition, five institutions have sent in published articles (B) which, although not classed as studies, have an important bearing on current theories and practices in independent study and honors work. Finally, some 17 colleges and universities have described their programs in letters (usually with enclosures), memoranda, or "notes" (C). The importance of these programs is such in the eyes of institutional representatives that when asked for "significant" studies they have tended in these numbers to report upon their experience with independent study. Under the three categories identified above are listed the programs, the institutions, and individuals from whom we have heard.

A. Studies.

1. Those appearing in the Clearinghouse of Studies on Higher Education, as of January 1959.

"Breaking the Thought Barrier," Samuel B. Gould, Journal of Higher Education, Vol. XXVI, No. 8, Nov. 1955, pp. 401-07. Antioch College.

"Preliminary Report on Reading Course Study," 1957. Antioch College.

"Proposal for Research on Independent Study," 1957. Antioch College.

"Student Evaluation of Course," 1957. Antioch College.

"Summary Notes--Workshop Conference Antioch-Carleton-Oberlin at Antioch College," Samuel Baskin and W. Boyd Alexander, 1957. Antioch College.

²⁵ The Independent Study Program in the United States, op. cit.

- "An Active Program for Active Minds," Arkansas Alumnus, March 1958, pp. 10-13. University of Arkansas.
- "A Proposal for Expanding the Honors Program for Superior Students in the College of Arts and Sciences of the University of Arkansas," G. D. Nichols, 1958. University of Arkansas.
- "Reaching Back to the Freshmen," Harold D. Hantz, The Superior Student, Vol. 1, No. 1, April 1958, pp. 8-9. University of Arkansas.
- "Provisions for Superior Students at Augsburg," 1957. Augsburg College.
- "Honors Program, College of Arts and Sciences," 1958. Boston College.
- "Study on Superior Students," Parts 1 and 2, 1957. Brooklyn College.
- "The Honors Program" (in conjunction with a general education program, memorandum dated March 28, 1958 to the faculty from W. Altus, Chairman of the Committee on Educational Policy), 1958. University of California (Santa Barbara College).
- "Report to the Faculty of the College of Letters and Science by the Special Committee on Objectives, Programs, and Requirements," pp. 54, 65-70; 1957. University of California.
- "Carleton Independent Study Experiment 1957-58," 1958. Carleton College.
- "The Bachelor's Degree With Honors--A Brief Description of the Nature and Aims of Honors," The Honors Council, 1957. University of Colorado.
- "A Survey of Honors Programs," since 1950. University of Colorado.
- "Visit to the South," Joseph W. Cohen, The Superior Student, Vol. 1, No. 3, June 1958, p. 19. University of Colorado.
- "The Educational Future of Columbia University," Report of the President's Committee on the Educational Future of the University, Part 8,2; 1957. Columbia University.
- "Techniques of Teaching Political Science: The Beginning Course," Robert H. Connery and Richard H. Leach, The Western Political Quarterly, Vol. XI, No. 1, March 1958, pp. 125-36. Duke University.
- "Interim Report" (on an experiment on independent study), James H. Strauss, 1957. Grinnell College.

"An Experimental Comparison of a Conventional and a Project Centered Method of Teaching a College General Botany Course," Joseph D. Novak, Journal of Experimental Education, Vol. 26, March 1958, pp. 217-30. Kansas State Teachers College.

"Experiment in Brainpower," Francis H. Heller, The Superior Student, Vol. 1, No. 2, May 1958, pp. 5-6. University of Kansas.

"Honors Designations at Member Institutions of the American Association of Universities," Francis H. Heller, 1957. University of Kansas.

"Opportunities for the Good Student," 1958. University of Kansas.

"A Program for Gifted Freshmen and Sophomores in the College of Arts and Sciences at the University of Kansas," George R. Waggoner, Bulletin of Education, Vol. 12, No. 1, fall issue, November 1957. University of Kansas.

"MacMurray College and Jacksonville (Illinois) High School Collaborate in Program for Superior Students," Leroy Garrett and Louis W. Norris, The Gifted Child Quarterly, Vol. 2, No. 1, winter 1958, pp. 3-8. MacMurray College.

"Marquette University Program of Independent Study," William H. Conley, 1957. Marquette University.

"A Report of the Committee for the Superior Student, College of Arts and Science, Miami University," Spiro Peterson, 1958. Miami University.

"The Honors College at Michigan State University," Stanley J. Idzerda, The Superior Student, Vol. 1, No. 2, May 1958, pp. 13-14. Michigan State University.

"A Proposal Dealing With Superior Students," 1956. Michigan State University.

"Effects of Varying Degrees of Student Interaction and Student-Teacher Contact in College Courses" (also Interim Report and Abstract), Thomas S. Parsons, Warren A. Ketcham, and Leslie R. Beach, Instructional Research Program, Project 2, School of Education, 1958. University of Michigan.

"The Honors Program," College of Literature, Science, and the Arts, 1958. University of Michigan.

"A Departmental Honors Program," 1957. Millersville State Teachers College.

"An Experimental Independent Study Program at Morgan State College, 1957-58," 1958. Morgan State College.

"Moving on to the Juniors and Seniors," E. A. Cameron, The Superior Student, Vol. 1, No. 1, April 1958, pp. 6-7. University of North Carolina.

"Report on Independent Studies Experiments at Oberlin College, 1957-58," Oberlin College.

"A Look at the Talented," H. F. Harding, The Superior Student, Vol. 1, No. 2, May 1958, p. 15. Ohio State University.

"An Honors Plan in Government at Oklahoma," Sam Krislov, The Superior Student, Vol. 1, No. 3, June 1958, pp. 9-10. University of Oklahoma.

"How Necessary are the Lecture and Textbook in a First Course in American History?" An Experiment in Independent Study, Thomas N. Bonner, 1958. University of Omaha.

"Honor Programs," 1958. Oregon State College.

"School of Science Proposed Degree Honors Program," 1958. Oregon State College.

"Increasing the Student's Responsibility for His Own Education," 1957. Rensselaer Polytechnic Institute.

"Final Report on a Grant for Better Utilization of Teaching Resources" (Reading courses for upperclassmen; the objective, superior educational experience and economy in the use of faculty), 1958. Rutgers University.

"Teamwork in St. Louis," Thomas D. Langan, The Superior Student, Vol. 1, No. 3, June 1958, pp. 13-14. St. Louis University.

"The Texas Brand of Honors," Harry H. Ransom, The Superior Student, Vol. 1, No. 2, May 1958, pp. 9-10. University of Texas.

"The Case for Corporate Wholeness," (Proposal of the Committee on Educational Policy, Professor Rob Roy, Chairman). The Superior Student, Vol. 1, No. 2, May 1958, pp. 7-8. Vanderbilt University.

"The Independent Study Program in the United States," Robert H. Bonthius, F. James Davis, J. Garber Drushal, Frances V. Guille, and Warren P. Spencer, New York: Columbia University Press, 1957, 259 pp. College of Wooster.

The contribution of institutions to independent study or honor programs is suggested by the following list, which indicates the number of studies, by institution, to be found in the Clearinghouse as of January 1959. The number following the institution indicates

the number of papers submitted. If no number is indicated, only one study has been received. Not all of these institutions are accounted for in the independent study listing above, because some of the studies are filed under the Clearinghouse category "Teaching."

University of Colorado--8	University of Kentucky
Antioch College--5	MacMurray College
University of Kansas--5	Marquette University
University of Arkansas--3	Miami University
University of Michigan--3	Millersville State Teachers Col-
University of California--2	lege
Michigan State University--2	Morgan State College
Oregon State College--2	University of New Mexico
Washington State University--2	University of North Carolina
Augsburg College	Oberlin College
Beloit College	Ohio State University
Boston University	University of Oklahoma
Brooklyn College	University of Omaha
Carleton College	Rensselaer Polytechnic Institute
Columbia University	Rutgers University
Duke University	St. Louis University
Grinnell College	University of Texas
Hillyer College	Thiel College
University of Indiana	Vanderbilt University
Kansas State Teachers College	College of Wooster

2. Studies received by the Clearinghouse from January 1959 to October 1959:

"Report on the Senior Seminar in General Education at Allegheny College," 1955, Allegheny College.

"The New College Plan," 1958, Amherst College, Smith College, Mount Holyoke College, and University of Massachusetts.

"The Structure of an American Studies Honors Program at Amherst College," Edwin C. Rozwenc, The Superior Student, Vol. 1, No. 6, Dec. 1958, pp. 10-11. Amherst College.

"Experiment on Independent Study, 1957-1958," 1958, Antioch College.

"Instructor-Student Contact Patterns and Training Procedures," 1959, Antioch College.

"Progress Report on the Carnegie Study of the Antioch Educational Program, February 1959," Antioch College.

"Current Issues in Higher Education, 1958," 1958, Association for Higher Education.

- "The Provision of Special Opportunities to Stimulate Performance in College on the Part of Students with Superior Ability," 1955, Association of Minnesota Colleges, College of St. Thomas.
- "An Accelerated Independent Study Plan for a Small Liberal Arts College," 1958, Columbia College.
- "A New Educational Program," Donald H. Morrison, Dartmouth Alumni Magazine, April 1957, pp. 20-25. Dartmouth College.
- "The Honors Program in History," 1959, De Paul University.
- "The Honors Program in English," Fred L. Bergmann, 1959, De Paul University.
- "Report of the Self Study Committee, September 1955," Ch. 5, De Pauw University.
- "The Upper Division in the College of Liberal Arts of Drake University, 1954-1955," pp. 95-106, Drake University.
- "Earlham College, Faculty Self-Study, 1954-1955," pp. 14-17, Earlham College.
- "Evaluation of the Educational 'Experiment' Carried on at and by Grinnell College in the Academic Years 1956-57 and 1957-58," Charles F. Haner, Grinnell College.
- "College of Liberal Arts at Howard Institutes Honors Program," 1958, Howard University.
- "The Honors Program," Rhodes Dunlap, 1958, State University of Iowa.
- "Observations on the Gifted Student in College," Francis Heller, Proceedings--Junior College Workshop, 1958, University of Kansas.
- "Flexibility in the Undergraduate Curriculum," Charles C. Cole, Jr., 1958, Lafayette College.
- "The Honors Program," 1959, University of New Mexico.
- "School of Science Proposed Degree Honors Program," 1958, Oregon State College.
- "Study on the Superior Student," 1959, Our Lady of Cincinnati College.
- "Faculty Educational Policies Committee Report on Independent Work Projects," 1957, Reed College.

"The Gifted Student--Undergraduate and Graduate," Toward More Effective Teaching at Rensselaer, No. 4, December 1958, pp. 2-4. Rensselaer Polytechnic Institute.

"Two Years of Experimental Work on Various Teaching Methods and Class Sizes," Roland H. Trathen, 1958, Rensselaer Polytechnic Institute.

"Superior Student Program," 1958, College of St. Mary of the Springs.

"Self-Study Report," Ch. 6, 1958, Southwestern at Memphis.

"Experiments in Teaching Effectiveness Applied to Introductory Sociology," Vernon Davies, Edward Gross, and James F. Short, Jr., 1958, Washington State University.

"An Experimental Approach to the Teaching of General Biology," Victor M. Cutter, Jr., 1958, The Woman's College, University of North Carolina.

"Yale's Scholars of the House," The Superior Student, Vol. 1, No. 6, December 1958, pp. 4-7. Yale University.

B. Published Articles, other than the studies reported above:

"Engagement Without Ends," Bertram Morris, The Superior Student, Vol. 1, No. 3, June 1958. University of Colorado.

"The Vital Ingredient: Superior Teachers for Superior Students," Walter D. Weir, The Superior Student, Vol. 1, No. 2, May 1958. University of Colorado.

"Advantages and Disadvantages of Honors Programs," Joseph W. Cohen, University of Colorado.

"The Departmental Approach," Ray L. Heffner, Jr., The Superior Student, Vol. 1, No. 3, June 1958. University of Indiana.

"Starting the Program Early," George R. Waggoner, The Superior Student, Vol. 1, No. 2, May 1958. University of Kansas.

"The General Approach," Robert C. Angell, The Superior Student, Vol. 1, No. 3, June 1958. University of Michigan.

"Superior Students in a Democracy," Dudley Wynn, The Superior Student, Vol. 1, No. 3, June 1958. University of New Mexico.

C. Correspondence and "notes" not appearing in THE REPORTER which are in the Clearinghouse files and round out as of January 1, 1959, the picture of the scope and nature of independent study:

Letter from Henry Woodward of Carleton College re independent study program.

"An Invitation to Learning," announcement of honors program at Central Missouri State College.

Letter from Lawrence G. Weiss, Managing Editor of University Honors Information Service (part of Inter-University Committee for Superior Students at University of Colorado), telling of two studies:

"The Provision of Special Opportunities to Stimulate Performance in College on the Part of Students with Superior Ability" covering 37 Minnesota institutions.

"Undergraduate Education in the Liberal Arts and Sciences at the University of Pennsylvania" by Robert B. MacLeod of Cornell.

Conference on the Superior Student in the State University--University of Colorado.

Clippings from Dartmouth College newspaper re their independent study theories and experiments.

Description of intended use of endowments to DePauw University re "Program of Curricular and Instructional Improvement for Superior Students"--proposals for pilot experiments in English and history. Consideration of interdisciplinary seminars, independent study programs, and advanced placement.

Letter from William A. Banner, Coordinator of Honors of Howard University, re experimental honors program for freshmen.

Letter from Ray L. Heffner, Jr., Chairman of Committee on Honors of Indiana University, re honors work and interdepartmental colloquia.

Letter from Manley Mandel, Chairman of Honors Council of University of Massachusetts, re purpose, eligibility, and rules of current honors program and design of potential one.

Letter from P. C. Gaines of Montana State College, re independent study experiments in general botany course, "great books" course, and "honor" course in general chemistry, to be taken by selected group of freshmen.

"Progress Toward an Honors Program at MSU, 1957-58", by Cynthia Schuster, Chairman of Honors Program Committee at Montana State University. Also publicity leaflet announcing independent study, seminars, and accelerated programs.

Letter from Edward Y. Blewett, of University of New Hampshire, re W. L. Bullock's biology course for students exempt by examination from first semester of a year course.

Letter from R. G. Carson, Jr., of North Carolina State College, re honors program.

Letter from Carydon Spruill, of University of North Carolina, re Professor Alfred Engstrom's connection with "continuing honors work" and Professor E. A. Cameron's connection with program for superior students.

Letter from J. K. Munford, of Oregon State College, re independent study in School of Science.

"Report of Henry Rutgers Scholars Committee 1957-58," letter by Samuel C. McCulloch urging administration to consider a regular honors program for exceptional freshmen, sophomores, and juniors (a program that is now in effect for seniors only).

Thiel College Catalog for 1958-59, p. 78, description of "Independent Study and/or Honors."

Letter from J. Garber Drushal, of College of Wooster, re worthwhile independent study programs at University of Oregon, Reed College, Pomona College, Shimer, and Guilford.

VI. THE CONTEXT OF INDEPENDENT STUDY

ALL INSTITUTIONS experimenting with independent study as such have expressed concern for the fact that they have not realized some of its potential or "plus values." "We may be throwing away large potential gains in favor of 'no difference.'" some declare.* To acquire some understanding of what is meant by "no difference" the nature of the experimentation with independent study is examined, section A. To determine the "plus values" that these institutions think they are missing, the implications in the experimentation are pondered, section B.

When implications in the experimentation with independent study (narrowly interpreted) are considered along with those seen in honors programs (narrowly interpreted), one begins to get a clear picture of the direction the independent study movement (broadly construed) is taking. (1) It is designed for most, if not all, students. (2) It is begun in the freshman year. (3) It is an integral part of the college's program. (4) It is flexible. (5) It is tolerant, if critical, of old (lecture and laboratory) and of new pedagogical, methods (Socratic, problem, case), recognizing that the critical factor in teaching and in learning is its quality. (6) It emphasizes generalization, without disparaging particularization. (7) It involves the teacher importantly. Independent study succeeds best where the teacher gives this enterprise his best scholarship. (8) It employs (does not just describe) critical methods in every aspect of the study and in every class meeting. (9) It makes provision for group learning, for some kind of student conference.

A. Outline of the Experimentation

Independent study for some of these institutions is independent reading.

- (1) In one college this reading only touches its teachers and their teaching to the extent that the faculty is involved in the preparation of reading lists for the students. This is done through an all-college committee for freshmen and sophomores and by the departments in the case of majors. In this instance independent study is almost an extra-curricular activity.

* "Report on Independent Studies Experiments at Oberlin College, 1957-58," op. cit., p. 22.

INDEPENDENT STUDY

- (2) Where independent study is a curricular phenomenon, even if it affects only a single course, the independent reading done by the student consists of:
- (a) Digging out his own textbook facts, aided by reading lists and study guides,
 - (b) Reading more discriminately in reference books,
 - (c) Consulting original sources,
 - (d) Reading on his own in what is variously described as a special project, library research, or an assigned problem.
- (3) Some corollaries of independent study as defined in 2a, b, c, and d are:
- (a) To reduce the number of class meetings (eliminating them in at least one instance), as was the case in many of the Fund for the Advancement of Education's studies.
 - (b) To substitute for the conventional lecture, a lecture-conference or a faculty supervised group conference, seminar or dialog, meeting once a month, once every two weeks, or once a week,
 - (c) To organize small, independent study groups without any faculty contact,
 - (d) To provide for independent study in which there is neither faculty nor student contact,
 - (e) To introduce the student to independent study and to the critical methods it entails by lectures which instruct the student in how to study independently,
 - (f) To develop new types of class meetings and new concepts of the role of the teacher and of the students in such a study. These meetings are called group conferences, colloquia, or dialogs. The teaching methods involved are described as informal, Socratic, problem, or case methods. The essential element in these methods has been described as one of inquiry.³¹ Land suggests that student research is the best learning experience and urges that opportunities be provided as early as the freshman year for those capable of it.³²

³¹ "Inquiry Into Inquiry," op. cit., pp. 93-99.

³² "Generation of Greatness--The Idea of a University in the Age of Science," The Ninth Annual Arthur Dehon Little Memorial Lecture, Massachusetts Institute of Technology, by Edward W. Land, Cambridge, Mass., May 22, 1957.

Type A(1), although one of the earliest programs and well publicized, has had no imitators and no report has been made public. Of the other experiments which combine one or another of the features listed in A(2) and (3), reports have been made.

In programs involving aspects of (2) and (3), the seven faculties involved have reported that the learning was at least as good as it was in conventional classes, be they expository lectures, typical laboratories, or conferences; that the demands upon the faculty's time were generally fewer; and that the students did not ask for more individual help in independent study classes or sections than they did in conventional classes or sections. Were it otherwise, the savings reported in contact hours might be completely dissipated.

In a study in which great pains were taken to compare the achievement of students in (3c) and (3d) with that of students taught conventionally, it was discovered that campus resident students (but not professionally experienced off-campus drive-in students) who studied independently of others without any faculty supervision (3d), memorized facts and phrases as well as or better than the students in the other experimental groups, including those exposed to a conventional, teacher-led discussion course.³³ The information acquired by this kind of independent study (3d), was not, however, retained quite as well as that acquired by the students in the teacher-led discussion treatment. Professionally experienced off-campus students, on the other hand, acquired and retained most factual information when taught by a conventional lecture method described in (d), above. Because these students, as a group, were known to be far more interested in learning concrete professional procedures than in reading about abstract concepts whose practical utilities were not readily apparent, the experimenters concluded that knowledge of the predominant personal needs and goals students hope a course will satisfy is of crucial importance in predicting the relative effectiveness of various methods. This was also the experience at Antioch, The Woman's College of the University of North Carolina, et al. As a matter of fact, these and other institutions³⁴ have observed that, under the conditions of their early experiments, at least, students exposed to independent study did not develop any more lasting appetite for reading than those taught conven-

³³ "Effects of Varying Degrees of Student Interaction and Student-Teacher Contact in College Courses," op. cit.

³⁴ Antioch, Oberlin, Morgan State College, and The Woman's College of the University of North Carolina.

tionally. experiment (3c) and (3d) described above suggests techniques designed to encourage independent learning that do not make use of the advantages implicit in good lecture presentations, their drama, and the contagious enthusiasm of the lecturer, do so at their peril. The same seems to be true of the laboratory³⁶ and of field work, for to fail to provide for first-hand knowledge of the subject hardly appears wise. To make no provision for student discussion not only deprives students of one of the essential satisfactions in learning, but apparently limits their learning. Good as independent study is in theory, it cannot in its practice afford to abandon the good with the bad, which is provided by lecture, laboratory, or group discussion, without limiting the students' learning. It should instead exploit the good features of these time-honored methods, adapting them to the requirements of independent study.³⁷

If it is unwise to scrap the old because it is old or to accept the new because it is new, what should be done? What are the implications in the experimentation?

B. Implications in the Experimentation

The estimate made of the experiment at the Woman's College of the University of North Carolina,³⁸ which combined elements of (2a) and (3b), is that while the students in the independent study program "apparently gained the same content of information [as those taught by traditional methods] with somewhat less expenditure of time in class" and "no harmful consequences . . . were demonstrated," the approach employed did not, "within the experimental period . . . demonstrably stimulate the students toward more independent study." The reaction of the Woman's College to its experiment is so mixed that both teachers and students want to think about it before they follow it up. The reason for the lukewarm reception of the experiment is probably to be found in the fact that the substitution of a 1-hour informal discussion period for two formal lectures per week and the requirement of more reading by the students constituted the extent of the experimentation. If all a student is supposed to do is to acquire more facts from his reading, this may well be all that he will do. If this is the extent of his activity, he is not likely to find independent study very rewarding.

The Carleton group, commenting upon a program which combined elements of (2a), (2b), (2c), (2d), (3a), and (3e), is

³⁶ "Teaching an Integrated Course," et seq., op. cit.

³⁷ "Inquiry Into Inquiry," et seq., op. cit.

³⁸ An Experimental Approach to the Teaching of General Biology, by Victor M. Cutter, Jr., 1957-58, The Woman's College of the University of North Carolina.

understandably disappointed in the "inability of students to derive general ideas from diverse readings."³⁸ The students and faculty in the Antioch and Oberlin experiments, which also dealt with elements of (2a), (b), (c), (d), (e), (3a), (3b), and (3e) report their reservations about the technique of using special projects as a vehicle of independent study. The fear of the students is that too great an emphasis upon projects which are too specialized results in inadequate coverage. The corrective suggested is that the instructor should impose a greater degree of structure on the material. Grinnell, which has also used special projects in its independent study program, is convinced that to be successful these projects must be integrated into the substance of the course. The students and faculties reacting to their experience with independent study, as reported in the Wooster book, recommend that there should be a "widening [of] the scope of topics and projects."³⁹

While variously expressed, the missing ingredient seems to be a proper context. The logical structure, the context, of any study or subject matter is to be found in its theoretical framework, in the "general ideas" which Carleton, and presumably the others, are seeking. The inescapable conclusion is that to realize its "plus values" independent study should be organized around such a framework. If independent study were open-ended and not limited to the study of special, intentionally circumscribed projects, the courses involved would acquire a theoretical orientation and as a consequence, a structure; for in inquiry the search is for the ultimate explanations.

A reaction of the Antioch faculty to a program in which "special orientation lectures" were provided (3e) is that such lectures in and of themselves were unsuccessful in developing "appropriate skills and attitudes;" that the students "fail(ed) to make substantial gains in . . . their ability to formulate theories and to test relevant hypotheses."⁴⁰ The "10-week survey" by which Oberlin's students were introduced to independent study is damned by faint praise. "Both the experimental and control groups agreed that the survey was somewhat helpful with more students in the control group than in the experimental group rating the period as not helping later learning at all."⁴¹ Among the "drawbacks" seen by students and faculty in independent study (honors) programs, as reported in the Wooster study, is "the lack of preparation" for independent study. The need for more group learning "particularly where the subject before the

³⁸ "Carleton Independent Study Experiment 1957-58," op. cit., p. 3.

³⁹ *The Independent Study Program in the United States*, op. cit., p. 89.

⁴⁰ "Preliminary Report on the Reading Course Study 1956-1957," Antioch College, p. 7.

⁴¹ "Report on Independent Studies Experiments at Oberlin College," op. cit., p. 15.

group is principles and procedures of research"⁴² was also recognized. "We need," Antioch concludes, "new techniques for promoting intellectual independence."⁴³

The problem described above apparently is that lectures about the methods of independent study, or of critical methods generally, are not very helpful. As Antioch has discovered, the best way to learn these methods is to employ them, not in lectures, not just in a 10-week survey, but in every meeting of the course and in every aspect of the study. The relentless employment of critical methods, by both the teachers and the students, appears to be essential if any notable achievement is to be made. While it is unfortunately true that most students are unprepared for independent study (the upperclassman is usually less well prepared than the freshman), the answer does not seem to be to prepare the student in some adjunct to a course, set in ahead or alongside of it, but to convert both student and teacher through something which might be described as total immersion. Similarly, to try to prepare a student for independent study in traditional courses is an unhappy expedient because the experience gained in such courses is a parody of independent study that could do more harm than good. While it is true that critical or research methods can be learned in groups⁴⁴ it is a mistake to think that this can be done in special meetings which deal with research methods quite unencumbered with a subject matter upon which the research should be done. Finally, it might be observed that what is needed is not necessarily new techniques (some of the best are very old) but the employment of new and old techniques on a scale which is new to this generation of teachers and students.

"A freedom which engenders procrastination"⁴⁵ and the need for "closer supervision"⁴⁶ are a criticism and a suggestion made by the students and faculty whose reactions are reported in the Wooster study. The problem here is basically a faulty concept of freedom. In independent study the teacher is not absolved of his responsibility for the learning of his students; he simply elects not to attempt the impossible--to do their learning for them. A freedom irresponsibly extended or accepted is license, and no more to be condoned under the mantle of independent study than elsewhere. The same is true of laziness be it that of the teacher or of the student. The antidote for license and laziness is obviously not closer supervision but inquiry of the kind which is as demanding of the teacher as it is of the student. Independent study is "not just for students but for those inquiries

⁴² The Independent Study Program in the United States, op. cit., p. 76.

⁴³ "Preliminary Report on Reading Course Study," op. cit., p. 8.

⁴⁴ The Independent Study Program in the United States, op. cit., p. 9.

⁴⁵ *Ibid.*, p. 78.

⁴⁶ *Ibid.*, p. 89.

and that knowledge furthered in the meeting and fructification of minds at work upon exciting tasks."⁴⁷

In much that is written about independent study and in much that is done in its name, too little attention seems to be given to purpose or intent. In too many instances, independent study is apparently held to be good for independent study's sake--or because it is a more economical way to teach. The work of Sanford and others suggests that independent study, provided it examines problems and postulates, may help institutions of higher education realize more of their purposes, be they stated as those of liberal, of general, or of higher education.

In reviewing this experimentation and in taking counsel with those who conducted it, one finds that if independent study is not approached with sophistication, if it places its exclusive or preponderant reliance upon student reading and student learning without making major accommodations in its teaching, it is not likely to be successful. Since the hollow ring of limited successes can bring a good idea like independent study into disrepute, more substantial images of independent study need to be created by those experimenting with it.

Finally, it should be observed that the experimentation with independent study (narrowly construed, in Antioch, Oberlin, University of Michigan, et al.) is but a part of the experimentation looking toward the "better utilization of teaching resources." The results of this experimentation with class size, methods, and administrative procedures reinforce some of the implications to be seen in independent study (narrowly and broadly construed). The research done on class size, for example, indicates that class size is not, by and of itself, the critical factor in teaching effectiveness. The research on "general" pedagogical methods removes the hope that some one right method will save us. "Problem-oriented approaches," however, show much promise. Since such methods are the ones employed to best effect in independent study, we are brought to the same place.

Promising as independent study is, we should not expect too much of it, too soon. Faculties and Americans being what they are--meeting crises only when they are caught up in them--perhaps the best that can be hoped for is:

- (1) That in many, if not most, institutions cadres of teachers will organize themselves for experimentation with independent study;
- (2) That this experimentation will be soundly conceived and will be conducted with sophistication;

⁴⁷ Conference on "The Superior Student in the State University," 1957, University of Colorado, p. 5.

- (3) That in this way enough experience can be acquired and a substantial enough literature developed that those arriving late will have somewhere to turn for a complete exposition of theory and practice, subject by subject, and class meeting by class meeting. If the reporting were to include the syllabi used and the testing procedures employed it would be helpful. Tape recordings and transcripts of lectures, laboratories, discussions, colloquia, and dialogs have been made and more might well be made. While this may not be the best way to get mass adoption of a new educational idea it may be all that should be hoped for. About the eventual outcome, one can, however, be sanguine because the alternative--mass education, worse compounded and without redeeming features--is something which neither teachers, their students, nor the Nation can stand very long.

VII. THE ECONOMICS OF INDEPENDENT STUDY

Economies of the order suggested below where the faculty is stretched by ratios of 1:6 to 1:3 (Antioch 1:6 or 1:3, the University of Michigan 1:3½, Oberlin 1:3) are not likely to be realized in general practice because there appear to be enough educational disadvantages in the procedures employed--on the testimony of the experimenting faculties--that some accommodation would almost certainly be made in the direction of more teacher contact. If, however, a context for independent study were developed of the sort described in section VI, and if the laboratory procedures employed at Washington State University were used, additional savings in faculty time might be achieved sufficient to make the effective ratio one of 1:3.

Most of the teachers caught up in independent study, whether it be under the banner of honors, independent study, or flexibility, are not so much interested in the economics of these programs as in their intrinsic educational worth. While we share this view, we shall, in this section, examine what little there is in the literature about the economics of independent study.

The Antioch program was set up to determine whether the quality of the students' educational experience could be improved through independent study and also whether a lesser degree of teacher contact was or was not practicable. Oberlin's immediate interest was to determine the feasibility of a proposed three-quarter program running throughout the year, in which a quarter, or one-third of the students' work, might be pursued off campus by independent study. Such an arrangement would relieve the institution of commitments in staff and facilities that it might not be able to afford in the "bulge." The Woman's College of the University of North Carolina and Morgan State College were similarly motivated. The University of Michigan's Instructional Efficiency Research Program has also examined this proposition.

While no one has brought in a balance sheet in which the costs, either in manpower or facilities, are precisely estimated, some approximations have been attempted. The situation in general seems to be that departmental honors programs for juniors and seniors, for gifted or even good students--involving, as they do, small classes, much counseling, and a low student-faculty ratio--are expensive. General honors, that move down into the freshman and sophomore years and particularly those that have been developed in connection with general-liberal education programs have fewer special sections and classes and are less expensive. The tentative findings of some of the experiments with independent study are as follows:

Antioch has, it believes, demonstrated that "no difference has been established"⁴³ between the performance of students who met with their instructor only once in 2 weeks and those who met six times. Their experimentation was done with lecture-discussion type courses. The classes involved were four small upperclass courses in literature, aesthetics, history, and sociology, and one large sociology course required of all students and containing many first-year students. The ratio in student-faculty contact hours between experimental and control sections was 1:6 in some courses, 1:3 in others. Their estimates are rough approximations because "separating out the demands of the experiment itself"⁴⁴ was, to say the least, difficult.

In a report upon project 2 of Michigan's Instructional Efficiency Research Program, the authors have this to say:

"The demands which were placed upon University resources to support the four experimental instructional patterns varied a great deal: (a) The 'lecture classroom' treatment, which required the availability of a meeting room (including lights, heating, janitorial services, etc.) for thirty hours, plus probably forty-five to sixty hours of instructor's presence and preparation time, accommodated thirty-six students but could probably have serviced twice that number with only a negligible increase in demands upon University staff and equipment. (b) The 'discussion classroom' treatment, which required a (smaller) meeting room (etc.) for thirty hours, plus forty-five to sixty hours of instructor's presence and preparation time, accommodated thirteen students and probably could not have provided for many more than twice this number, per instructor, without suffering severe losses in the amount of inter-action time available to each student--the essential component of this kind of instruction. (c) The 'autonomous groups' treatment, which in both sections required no regularly assigned space other than dormitory lounges, cafeteria corners, and private apartments, and which utilized no more than perhaps five hours per section of instructor's preparation, orientation, and evaluation time, accommodated twenty-five students and surely could have serviced ten times this number with no noticeable increase in demands upon faculty time or University facilities. (d) The 'independent students' treatment, which in both sections required no special assignments of University facilities and only about five hours per section of instructor's preparation, orientation, and evaluation time, accommodated twenty-four students and certainly could have handled at least ten times this number with no sizable increase in faculty services or decrease in instructional quality.

"Thus, if faculty time alone is considered, the 'lecture classroom' treatment serviced about 0.7 students per faculty hour expended, and it probably could have serviced about 1.4 students per faculty hour; the 'discussion classroom' treatment serviced about 0.3 students per faculty hour, and it probably could have handled up to 0.5 students per faculty hour; the 'autonomous

⁴³ "Preliminary Report on Reading Course Study," op. cit., p. 6.

⁴⁴ Ibid., p. 1.

groups' and 'independent students' treatments serviced about 2.5 students per faculty hour, and they probably could as effectively have handled 25 or more students per faculty hour. No attempt was made to account in detail for University administrative overhead in the figures shown above. Under the present experimental arrangement it was probably about equal for all treatments. Faculty time spent in the preparation of a self-study guide, for example, would be pro-rated among all experimental groups solely in proportion to their numbers. However, if these costs are assumed to be roughly proportional to the expenditure of faculty time, then they would certainly be greatly reduced for the 'autonomous groups' and 'independent students' treatments if these instructional patterns were to be regularly instituted, utilized to their optimal complements, and if faculty loads and appointments were to be computed accordingly."⁸⁰

If the lecture classroom experience is made the basis for comparison the ratios as regards the number of students who could be accommodated in the several experimental situations were as follows:

"Lecture-classroom . . . could have accommodated" $72\pm = 1$

"Discussion-classroom . . . could have accommodated" $32\pm = \frac{1}{2}\pm$

"Autonomous groups [a type of independent study] . . . could have accommodated" $250\pm = 3\frac{1}{2}$

"Independent students . . . could have accommodated" $240\pm = 3\frac{1}{2}$

Oberlin's conclusion, in an experiment with introductory science and mathematics courses in which the students were required to spend one-third of their time in independent study, is that these students "learn as well as students who are in classroom contact with their instructor for the entire course."⁸¹ The student-faculty contact-hour ratio here between experimental and conventional procedures was 1:3.

It had been established earlier (1945-55) at Washington State University that in an introductory biology course employing a form of independent study (the Socratic method) one large "lecture-conference" type of meeting per week could be substituted for three conventional lectures, with no disadvantage for the students' learning and that a type of laboratory could be devised that required one-third as much supervision as conventional laboratories. The evolution through which this course went is described in detail elsewhere.⁸² Briefly, it was as follows: First, a conference or dialog was introduced into a course which, in other respects, was traditional save that it had pretensions of being

⁸⁰ "Effects of Varying Degrees of Student Interaction and Student Teacher Contact," op. cit.

⁸¹ "Report on Independent Studies Experiments at Oberlin," op. cit., p. 21.

⁸² "Inquiry Into Inquiry," op. cit.

"integrated." Considerable experimentation was done with the dialog, including its effectiveness in small (15 students) and large sections (45 or more students). The lecture evolved from the usual expository type to something best described as a lecture-conference. While the usual student-faculty ratio in laboratories of introductory biology courses is 1:20-24, in this course it is 1:60-72. Since these meetings are, in essence, laboratory-conferences in which the students are organized in teams of 24 and since the laboratory period is three hours long, the instructor can, by staggering his group contacts, meet with all three groups in an hour-long discussion, in one three-hour laboratory. The student-faculty contact in this course is less than that of conventional courses in a ratio of 1:3.¹³

At Carleton the experiment was with small, upper level courses and ran for one-third of a semester. No effort was made to set up control sections or to estimate the savings in faculty time. The conclusion of this faculty was simply that "the objectives of most courses can be obtained with a considerable reduction in the number of class hours, through careful planning and rearrangement of material."¹⁴

In the University of Michigan's research program, referred to earlier, independent study was examined in two treatments, called "(b) independent, autonomous study groups" and "(c) entirely independent students." The first group, (b), consisted of "from four to five members each, which met--free of any instructor contacts--as many beyond a minimum of seven times and as long, at whatever hours, and in whatever places their members decided." These students, like those in the other treatments, including the conventional classroom, "were assigned the standard text and were provided with a detailed self-study guide and manuals." The entirely independent students (c) were given the same texts, guides, and manuals as the others, but "were given no other specific schedules or assignments and were permitted no instructional contacts (by correspondence or otherwise)" and no contacts between one and any other student. These were, in the language of the study, "no interaction" and "no teacher contact" students.¹⁵

The experimentation at Washington State University was done before the phrase "independent study" had been coined. The "bulge" was distant enough so that little or no attention was given to the economics of the methods employed. The purpose of the experiment was to see if better methods of teaching and learning could not be devised. Actually, more expensive methods might have been adopted if the experimentation had led in that direction. The method finally hit upon and refined went nameless for years but was eventually dubbed "Socratic." The intent throughout the 10 years of the experiment was to involve students in the learning processes as much as possible, to encourage students to think

¹³ "Teaching an Integrated Course," et seq., op. cit.

¹⁴ "Carleton Independent Study Experiment," op. cit., p. 4.

¹⁵ "Effects of Varying Degrees of Student Interaction and Student-Teacher Contact," op. cit.,

more and to use more critical methods of study. A by-product of the experimentation was the discovery that with less student-teacher contact it was possible to achieve more (and presumably better) learning.

At Carleton, Morgan State, and the Woman's College, economies were worked but no attempt was made to measure these savings carefully.

That the "set," "core," or "common" curriculum discussed in section VI is an efficient device and that integration improves the efficiency of learning is indicated by the experience of an institution that combined some aspects of both.⁵⁸ By administering Graduate Record Examinations to its students toward the end of the sophomore year it discovered that these students, the poor and average as well as the good, placed just above the national median, comparing favorably with 4-year college graduates of representative liberal arts colleges. The efficiency of teaching and of learning where all students have the same background and take the same courses in the same order, is too obvious to require elaboration, unless it be to note that this creates a situation in which there is much teaching of students by students because their commonly-held knowledge and common experience permit easy communication.

An important variable in all of this experimentation is the interpretation given to the term "independent study." At Antioch it meant that the students were "expected to cover content and to achieve the objectives of the course through readings, work, and discussions conducted over a period of several weeks without the presence of the instructor."⁵⁷ At Oberlin it meant that the students "were required to work independently and without classroom contact with their instructor for one-third of the college year."⁵⁸ In mathematics, "the experimental sections were provided with collateral material . . . and occasionally additional problems."⁵⁹ In geology, the experimental group met in a separate laboratory section. "No attempt was made to provide for independent laboratory study. The help that was given the experimental group in the laboratory was limited largely to assistance with the laboratory procedures . . . [Students, organized in study groups, were] given a schedule that included topics to be covered, required reading, supplementary readings, and suggestions for paper-topics." "During this independent study period [of 8 weeks], the instructor visited each group once."⁶⁰

In psychology the experimental group was "divided into interest groups of approximately 5-7 students each, the grouping being based upon common topics among group members. These groups were required to meet once each week to discuss their problems and progress and to hand in written reports of their group meetings. They had also been assigned readings to com-

⁵⁸ College of General Education, Boston University.

⁵⁷ "Preliminary Report on Reading Course Study," op. cit., p. 1.

⁵⁸ "Report on Independent Studies Experiments at Oberlin College," op. cit., p. 4.

⁵⁹ Ibid., p. 4.

⁶⁰ Ibid., pp. 4-7.

plete during this period which would provide them with a background for the materials to be presented when they returned to class meetings."⁴¹

As with the experiments described earlier, the authors of the New College Plan point out that their primary goal is to provide "for liberal education of the highest quality, and [that their] other goal, low cost, has not been allowed to compromise educational requirements at any point. But educational and economic advantages can be made to go hand in hand."⁴² It is calculated that the 20:1 student-faculty ratio, made possible by independent study, enables the college to do without endowment income. Once the college is established, it is hoped that student fees will be sufficient to support the enterprise.

⁴¹ Ibid., p. 10.

⁴² "The New College Plan," op. cit., p. 13.

VIII. THE RESEARCH NEEDED IN INDEPENDENT STUDY⁶³

THE NEED in independent study is for research that puts the pieces together. This would consist mainly of pilot experimentation and could be done in several ways:

1. By providing "independent study", not in discrete courses, but in an integrated curriculum. Although Antioch, Oberlin, Carleton, Morgan State, et al. have experimented with independent study in several different courses, no institution has attempted to develop a curricular context for independent learning.
2. By searching the experience colleges and universities have had with integration and common curricula and making provision for independent study in courses and curricula that reflect the lessons in this experience. (See pp. 25 to 26.)
Since better conceptualization is one of the purposes of independent learning, some experimentation should be done with conceptual integration.
3. By requiring students to take all of their work in "independent study" courses for at least a semester; and preferably for 1 or 2 years. An exposure of students to independent study for only 3 hours in 15, 30, or even 120 makes it difficult, if not impossible, to measure gains in critical thinking, creativity, or changes in attitudes and values. These are thought to be some of the potential "plus values" in independent study. On the limited basis of the experimentation done to date it has been impossible to demonstrate that independent study has been consistently more successful in realizing these critical attributes of the highly educated man than traditional approaches. Until more of a student's time is spent in what for him is a strange experience, we are not likely to learn whether independent study does or does not have the "plus values" predicted for it.
4. By reviewing the teaching methods employed in (and outside of) independent study, and experimenting with some one appropriate method such as student inquiry (problem, case, Socratic, or research methods); preferably in all the courses taken by a student for a semester or longer. The critical factor in independent study may not be courses or curricula, reading lists or projects, or the greater amount of study done by students. It may rather be the quality of the learning and of the teaching. This thesis has not been effectively tested.

⁶³ A series of working hypotheses.

5. By "broadening" honors-type approaches to independent study so that:

- a. All students who can profit from independent study are provided with this opportunity.
- b. Lower as well as upper division students are included.
- c. Experimentation is done with some of the more promising teaching techniques (4 above).

While pilot projects have been instituted in (a) or (b) or (c), no one has combined all three. Many of the individuals and institutions with the longest history in honors recognize that these programs are being and will continue to be broadened in this way. They also agree that honors programs must give "independent study" a fair trial, for if faculties could be used more economically, the chief "brake" on honors programs, their costs, would be removed. It is recognized that it is not easy to broaden honors because larger segments of college faculties have to be involved and major curricular adjustments made.

6. By combining experimentation with the pieces of 1, 2, 3, 4, and honors-type instruction. This would be the penultimate in synthesis in that it would examine all the hypotheses developed to date in independent study and honors programs except the practices described in the introduction under flexibility.

7. By making, in addition to the above, institutional provision for early entrance into college and hence into this program, advanced placement, credit by examination (or similar devices), and comprehensive examinations. This would be the ultimate in experimental synthesis.

In the experimentation outlined above, careful provision should be made for evaluation. To do this well, the newer methods developed for testing critical thinking, creativity, attitudes, and values should be evaluated and improved by panels of "experts" assembled for the purpose and these methods and experts used in the pilot studies undertaken. Newer methods for calculating costs per student or other units of space, time, process, or product should be similarly evaluated, improved and used. This would permit teachers in experimental programs to devote their total energies to their teaching with some assurance that they might learn, at the end of the experiment, whether improvements had or had not been worked, and at what cost in time, space and dollars.

8. By examining the contribution made to any of the above, by any combination of audio-visual techniques.

9. By developing a repository of good working models. If transcripts were made of effective lectures, conferences and laboratories, seminars and colloquia, lists prepared of good primary sources and other readings, and syllabi developed in diverse subjects at different levels, these materials could be put to good use by institutions experimenting with independent study.

All of the experimentation referred to above should, of course, be done with representative students in representative colleges if it is to have meaning and impact for the many and varied institutions that characterize American higher education.

NEW DIMENSIONS
in Higher Education

Number 2

Effectiveness in Teaching

by

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and

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Clearinghouse of Studies on Higher Education
Division of Higher Education

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FOREWORD

This is the second study to appear in the series "New Dimensions in Higher Education." It deals with recent research on teaching effectiveness and thus bears upon the critical problem of faculty utilization. It has been prepared by the staff of the Clearinghouse of Studies on Higher Education.

The data reported in this paper come from two of the categories employed in the Clearinghouse of Studies on Higher Education: "Teaching" and "Curriculum." The research reviewed is that done since 1955 on class size, "general" methods of teaching, "problem-oriented" approaches to teaching, and "directed" learning. Hypotheses are advanced on the four areas of research identified above, and data bearing upon these hypotheses are quoted subject by subject and study by study.

Colleges and universities are interested in making their teaching as effective as possible. This review attempts to alert institutions to studies, most of which have yet to be published and hence do not appear in any bibliography except that represented by REPORTER. We hope this review will be helpful to institutions doing or contemplating research on teaching.

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I. INTRODUCTION

ALWAYS IMPORTANT, teaching effectiveness is today a national concern. In the second report of the President's Committee on Education Beyond the High School the top priority is given to "the mounting shortage of excellent teachers."¹ Since the most strenuous efforts in the recruitment and training of college teachers can hardly meet the requirements of higher education in the foreseeable future, the most practicable way to provide enough good teachers is to make good teaching go farther. The President's Committee recommends that "educational organizations ... keep individual colleges fully informed about such experiments and new developments"² as look in this direction. The Clearinghouse of Studies on Higher Education cannot be sure that the research reported to it is representative of the work done; nevertheless it is sharing the information it has on teaching effectiveness. Irrespective of the degree of completeness of the sample, it has been drawn objectively for it includes all of the newer studies even though some are not "experimental" in nature. While one 1954 and one 1955 study are reported, the rest (31 studies) are of research done during the last three years (1956-1958). Not included is the research on television because this has been reviewed carefully in "Teaching by Television," a report from the Ford Foundation and the Fund for the Advancement of Education, May 1957.

The aim of the present reporting is:

1. To state the hypothesis suggested by the data in each of the four categories into which this research falls, (a) class size, (b) "general teaching" methods, (c) "problem-oriented" approaches to teaching and (d) "directed" vs. "undirected" teaching;
2. To summarize the research done and to suggest some of the implications seen;
3. To review the several studies, describing, in each instance:
 - (a) the conditions under which the study was done--this very briefly--and -
 - (b) the findings in representative quotations;

¹ Second Report to the President, The President's Committee on Education Beyond the High School. Washington: U.S. Government Printing Office, July 1957, p. 5.

² *Ibid.*, chap. 1, "The Need for Teachers," p. 18.

4. To note at the end of each category the implications in the several experiments for independent study.³ In this connection it should be recalled that the President's Committee on Education Beyond the High School recommended "that there be vigorous and objective exploration and application by faculties and administrators of methods of increasing the effectiveness and productiveness of the teacher, including instructional procedures which place on the student more responsibility for self education"⁴

The research is presented in this manner so that the reader can quickly see the historical and other contexts of the work and the direction it has taken. By taking exception to the hypotheses as stated or the data as presented and selected for quotation, the reader can advance this research and the understanding of it. It is also hoped that this technique of presentation will cause the reader to supply data (i.e. studies) not as yet reported to the Clearinghouse and so help to develop better working hypotheses. If the reader wants more information about any study described he should write the author, whose campus or other present address is given, or consult the Clearinghouse.

³ For definition of independent study, see The Independent Study Program in the United States, by Robert H. Bonthius et al, New York: Columbia University Press, 1957, p. 9.

⁴ Op. cit., p. 18.

II. CLASS SIZE

Hypothesis A: That class size is not the critical variable in teaching effectiveness in higher education; but rather the quality of the teaching (and learning).

The evidence in support of hypothesis A, as Macruder and others observe, has been piling up for four decades or longer. The criticism leveled at earlier studies, that they only measured the content of learning, has lost much of its force because reasonably valid tests of intellectual skills, of motivation and attitudes have been devised and used in the newer research. The hypothesis stated above seems to be an accurate representation of the facts, for all the 12 papers in this section point in this direction as do most of the earlier studies. It is also properly qualified; this is not the case with most statements on this subject. Since something other than size, namely the quality of the teaching (and learning), is the critical factor at least in higher education, it would seem that this is where we should look to discover how greater teaching effectiveness may be achieved.

In the studies examined, and described on pages 3-9, 12 deal with class size. The research (including in each instance the conditions under which it was done and its findings) used as the basis for the hypothesis developed above, is as follows:

1. "Experimental Study in Instructional Procedures," F. G. Macomber and Lawrence Siegel, Miami University, 1957 (also "Progress Report, Experimental Study in Instructional Procedures," 1956).

Courses in introductory business and government (81 students), chemistry (134 and 92), classics (49), composition and literature (138 and 99), economics (90 and 157), French (31), geography (296 and 207), government (39), mathematics (77 and 42), physics (73 and 93), psychology (88 and 56), sociology (58), social studies (50 and 30), teaching principles (45), and zoology (135 and 102). Classes were met in large sections (296-31) and in small sections (averaging 25-30 but dropping as low as 16).

Findings

"Acquisition of subject matter knowledge is not adversely affected by assignment to a large class rather than to a small control section. This has been a consistent finding for all three semesters of investigation to date."

"When ... achievement, defined as the ability to solve problems and think critically in the subject-area ... was investigated

... in selected courses ... it was found that large class instruction compared favorably with control instruction."

"In terms of the development of desired attitudes [or overcoming of stereotypes] within the field of study [evaluated only in three courses] ... large class instruction was found to be somewhat inferior in this regard in two of the three courses."

"Student motivation and interest in the specific subject matter is not significantly diminished in large classes for one semester."

"Most students enrolled in ... large classes would prefer to be in a conventional [smaller] class ... The instructor is a major determinant."

"The progressive disenchantment [found in] TV instruction ... was not characteristic of students in large classes (that did not employ television)."

"Attitudes about ... large class instruction are independent of student's level of academic ability."

"The ... students' attitudes toward the method of instruction did not influence achievement in any of the courses."

"The students' attitudes toward large classes appear to be influenced [not by size] but by the content of the course and the ability of individual instructors to handle larger groups of students."

"Preparation time for large classes is not disproportionately lengthy as it is for TV classes, and ... the physical barrier between student and teacher is not as severe."

"Teaching a large class other than through television is more demanding than teaching a small class The amount of time necessary to develop cases and problems ... is much greater than the time required to handle the course by lecture."

2. "Class-Size and Teaching Efficiency," Joseph C. McKenna, Fordham University, 1957.

Courses in introductory social science (economics, politics, and sociology): Classes were met in larger (60 students) and in smaller (30) sections.

Findings

"Given good teaching, a large class with good quality equaled the achievement of a smaller class with the same quality [in command of subject matter, social awareness and in principled synthesis of social outlook]."

"The opportunities provided for instruction and questions seemed as satisfactory to the members of the large classes as of the small."

3. "Large and Small Sections in College Classes,"
J. H. Rohrer, Tulane University, Journal of
Higher Education, Vol. 28, 1957, pp. 275-79.

Introductory course in American government: Classes were met in large (332 and 309 students) and small (31 and 23) sections. The same coverage, assignments, textbook, syllabus, and examinations were involved in both types of classes.

Findings

"The amount of achievement, as measured by standardized tests [and] the attitudes of students toward American Government, varied as a function of the course instructor and did not vary as a function of size of class. This suggests that the differential skills and abilities of the instructors to present materials to large and to small classes is the critical variable."

4. "Experiments in Teaching Effectiveness,"
Vernon Davies, Edward Gross, and James F.
Short, Jr., Washington State University, 1958.

Course in introductory sociology: Classes were met in large (71 students), in medium (35), and in small sections (18).

Findings

"Size of class was not found to be related to student achievement."

5. "General Report on the Program for the More
Effective Utilization of Teaching Resources,"
University of New Mexico, September 1, 1957.

Courses in accounting (192 vs. 30 students and 62 vs. 28), English (47 vs. 11-26), American government (60 vs. 28 vs. 14), algebra (56 vs. 6 small sections of 19 to 29): Classes utilizing lecture or discussion or combination of both were met in large and in small sections, the sizes varying with the subject and level of advancement.

Findings

"Where class sections were determined to have been comparable ... results ... suggest that the instructor is a more important variable than class size per se. For example, ... where the same instructor taught sections of three sizes, the performances of the sections nearly coincided ...; where the same instructor taught a large and small section, there were no significant differences in performance, although the mean score of

the large section was in each case slightly lower. Further, where multiple small sections were taught by different instructors ... significantly different performances resulted."

"The difference in size and sectioning of [the] accounting [class] did not in itself lead to a demonstrable difference in outcome [as measured by a final examination]."

"The generally insignificant differences allow us to regard ... two sections [of accounting, one large and one small] as equivalent in the outcomes measured. The higher proportion of B's in the small section, while statistically significant, is mitigated somewhat by the consistently neutral findings for the other letter grades and the numerical scores."

"... the performance of the large section was slightly below the central tendency of ... [five smaller] sections taken as a group. The extent to which this is attributable to the difference in size or to grading and other possible differences among the instructors, cannot be ascertained." (English.)

"Class size was not differentially related to performance in the course, the utilization of class time, nor attitudinal changes." (American government.)

"The large experimental section was, from the standpoint of ... [a college algebra course], neither superior nor inferior in performance."

6. "A Lecture-Study Mathematics Program,"
James C. Eaves, University of Kentucky, 1958.

Courses in mathematics: Classes were met in large lectures (180) and in smaller lectures (25). (Provision was also made for supervised study in connection with the large lectures.)

Findings

"It was possible to assign the most competent faculty [to the large classes]."

"Impressionistic reports are favorable both as to the quality of the instruction and as to the effectiveness of student-faculty contacts. Students and their parents ... were enthusiastic."

7. "Preliminary Report on (Mathematics) M 101-2
Study, 1956-57, On Use of Student Assistants,"
Ruth Churchill and Paula John, Antioch College.

Course in the fundamentals of mathematics (a general education course): Classes were met in large lectures (70) and in smaller discussion sections (20-30). (Students in the large lectures met in small, 35-student laboratories supervised by upper-classmen. Students in the small discussion sections met in 20 to 30-student laboratories conducted by the instructor.)

Findings

"The skills and content [learned] ... did not differ significantly [in] the two types of classes."

8. "A Study of Student Achievement as Affected by Teaching Method and Class Size," Roland H. Trathen, Rensselaer Polytechnic Institute, 1957.

Course in statics and strength of materials: Classes were met in large lecture and problem or experimental sections (85) and in small lecture discussion sections (16-20).

Findings

"The students in the experimental sections received better grades on the final examination."

"The student has not suffered because of his assignment to a large experimental group. It also appears that a case can be made for exposing students, in large groups, to the most capable, sensitive and stimulating teaching that a school can afford."

9. "Toward More Effective Teaching at Rensselaer," No. 4, December 1958.

Courses in chemical engineering (64 and 65 students), engineering mathematics (65), metallurgical engineering (larger than usual 20-man section), psychology (50 vs. 25): Classes were met in large and in small groups (actual size depending on specific subjects).

Findings

"Seniors consistently perform as well in large single sections as ... in traditional small sections When juniors are taught by a combination of large lectures and small discussion groups, their achievement is comparable to that attained under the small section system." (Chemical engineering.)

"Course grades indicated that the level of achievement of the large sections was at least as high as that attained by the small sections ... [Other factors] contributed to the success of the large sections More questions were asked after large class sessions than ... small sections." (Engineering mathematics.)

"Student achievement in the larger classes appeared to be equal or superior to that of comparable students in smaller classes of previous years." (Metallurgical engineering.)

"Preliminary comparison of student performance in this [large] section with that in smaller sections ... failed to reveal any significant discrepancies This increase in class size was accompanied by some improvement in the quality and pertinence of classroom discussion without adverse effect on the amount of discussion." (Psychology.)

10. "Teaching By the Discussion Method," Samuel L. Becker, James N. Murray, Jr., and Harold P. Bechtoldt, State University of Iowa, 1958.

Course in American government: Classes were met in large (75-80) and in small sections (18-25).

Findings

"It appeared as feasible to conduct a class by the discussion method with 75-80 students ... as with 18-25 students."

11. "Experimentation With Implications for Instruction," a summary, Tom A. Lamke, Iowa State Teachers College, 1958.

Courses in business education, education, humanities, mathematics, piano and speech: Except for one course providing individual instruction classes, which usually met in several small sections, met in a single section twice to several times as large.

Findings

"Incomplete; some evidence that instructional efficiency can be improved through scheduling multi-section classes to meet together once a week and in separate sections remainder of week." (Business education.)

"Using two instructors, each teaching in his specialty, 116 students taught in one section instead of the usual 48. Instructional outcomes seemed satisfactory." (Education.)

"Incomplete, but some evidence suggests class size may be increased to 48 instead of the usual 18-20, with improved learning." (Speech.)

"Evidence indicates that students learn as much in classes of 80-100 as they previously did in classes of 35 or less." (Mathematics.)

"Use of group instruction [and student assistants] in teaching beginning piano seems effective."

"Instructional outcomes in a class of 70 seemed no better than those in the usual class of 40-50. If we ... have not made a good case for the small class, we certainly have not made one for the large class either." (Humanities.)

"Students in a class of 48 did not do quite as well as students in a standard sized class of 28." (Education.)

12. "The 'Dialog'," Winslow R. Hatch, Washington State University. Improving College and University Teaching, Summer 1958, pp. 73-82.

Discussion-type meeting, called a conference, in a science course. Classes met in small (16-20) and medium (35-40) sections.

Findings

Students think their way through to their own answers.

"The questions raised and the statements made in answer to them are usually short, so that the discussion is smartly paced."

"There are often ten to fifteen auditors at a dialog."

Implications for Independent Study

The size of classes is an entirely irrelevant matter so far as independent study is concerned. A small class does not advance independent study, or even learning, because it is small or a large class inhibit such study because it is large. Both could. The critical element for independent study in particular and learning in general is what goes on in the class. Are the individual students thinking or are they being caused to think? The implication in Hypothesis A for independent study in higher education is that the teaching (and learning) is the critical factor--a kind of teaching that can make large class meetings (usually lectures) acceptable, if not ideal, instruments for stimulating independent study.

Some experimentation has already been done in a few honors or independent study programs with large class meetings. More will probably be done out of necessity or conviction. The implications for discussion or group conferences are also clear for there is no evidence in the research reported that somewhat larger sections than those characteristically employed today cannot be made effective instruments of independent study. This follows because, as is observed in "Teaching by the Discussion Method," "It is a well-known fact that no single student is able to participate very often in a classroom discussion. In other words, much of the discussion experience is actually vicarious." At Washington State University large sections (40-60) were surprisingly successful in an independent study experiment.

III. GENERAL OR PEDAGOGICAL METHODS

Hypothesis B: That as regards the "general methods" of teaching, no one method can be demonstrated to produce more or better learning than another.

If the research reported below is representative of our present state of knowledge we should abandon the hope--and the research nourished by this hope--that a miracle can be worked by discovering and employing some one "general method" of instruction. We would be better advised to direct our energies in more profitable directions.

Stated somewhat more concretely, the consensus of studies made since 1920 is that no one mechanical teaching device, in and of itself, is better than another. Teaching by the lecture, recitation, discussion, tutorial, reading-study, reading-quiz, correspondence or several different laboratory methods (the regular, the drawing, or the physiological type) has not been demonstrated to be intrinsically better than some other technique. The object of research on effectiveness of teaching should be shifted from the "tactics" of teaching to the "logistics" of learning, to methods which, in contradistinction to the pedagogical, may be described as the methods of scholarship, of inquiry, of problem-solving or of critical thinking.

In the studies examined and described on page , 8 deal with "general" methods of teaching. The research (including in each instance, the conditions under which it was done and its findings) used as the basis for the hypothesis developed above, is as follows:

1. "Effects of Varying Degrees of Student Interaction and Student Teacher Contact in College Courses," T. S. Parsons, W. A. Ketcham, and L. R. Beach, Instructional Efficiency Research Program, Project II, University of Michigan, 1958, pp. 1-56.

The experimental treatments consisted of:

- (a) Conventional classroom: (lecture)
- (b) Conventional classroom: (small group discussion)

¹"An Experimental Comparison of Recitation, Discussion, and Tutorial Methods in College Teaching," Harold Guetzkow, Carnegie Institute of Technology, E. Lowell Kelly and W. J. McKeachie, University of Michigan, The Journal of Educational Psychology, Vol. 45, April 1954, pp. 193-207.

- (c) Autonomous instructorless small groups meeting at student's discretion
- (d) Instructorless students engaged in independent study, with no student contacts, and no assignments.

This study involved 98 students in a course in psychology of child development, and 61 students in a sociology course, marriage.

Findings

"The 'no interaction,' 'no teacher contact' independent students ranked highest, the 'high interaction,' 'no teacher contact' autonomous groups were in the middle, and the 'medium interaction,' 'high teacher contact,' discussion classroom averaged lowest" in on-campus, weekday meetings. "The lecture classroom and autonomous groups . . . averaged nearly the same on achievement while the independent students . . . scored below them 'significantly' [in Saturday or off-campus meetings]."

"Four months after [the course] . . . no statistically significant differences in achievement . . . remained among any weekday experimental groups."

"In the Saturday section . . . total differences in measured achievement became even greater . . . between the high scoring lecture classroom . . . and the low scoring independent student."

"When students' characteristics, such as 'residential status' and 'professional experience' were examined, it was discovered that these were more important determiners of these outcome variables than the methods alone."

"Situational and demographic characteristics of students are probably more important factors in determining . . . learning than are even large variations in the instructional method."

2. "The Relationship of Teaching Effectiveness to Class Size and Method of Instruction," Vernon Davies, Edward Gross, and J. F. Short, Jr., Washington State University 1957.

Size was kept constant and three methods, the lecture, the use of visual aides, and closed circuit TV were compared.

Findings

"Teaching technique was not found to be related to student achievement."

3. "Teaching by the Discussion Method," Samuel L. Becker, James N. Murray, Jr., and Harold P. Bechtoldt, State University of Iowa, 1958.

Experimentation was done with television discussion (14-35+), and television observation (27-24), small group discussion (18-29),

large group discussion (75), and the lecture method (112-132), in a basic course in American government.

Findings

"... As measured by the mid-term and final examinations ... it made no difference which method was used."

"Students of high and low ability were not differentially affected by the method of instruction."

As regards "attitudes toward the concepts of 'liberal democracy' ... there was no significant difference between methods of instruction."

"The only advantage of discussion over lecture appeared to be that students tended to prefer the discussion method. The instructors, on the other hand, preferred relatively more lecturing."

"If the method of instruction made the slightest difference, this difference was dwarfed by the general academic ability factor."

4. "A Comparison of Instruction by Kinescope, Correspondence Study and Customary Classroom Procedures," Thomas S. Parsons, University of Michigan, The Journal of Educational Psychology, Vol. 48, No. 1, January 1957, pp. 27-40.

Findings

"Kinescope or T.V. techniques are at least as effective as-- and independent correspondence study is probably more effective than--conventional class discussion methods for promoting durable factual achievement, alone, in abstract or highly verbal academic subjects."

"No significant difference appeared ... in achievement, cohesiveness, and ratings of the course's personal value."

5. "A Study of Student Achievement as Affected by Teaching Method and Class Size," Roland H. Trathen, Rensselaer Polytechnic Institute, 1957.

Two methods were used. Either two large lectures (85-98) and 2 problem sessions replaced 4 meetings of small sections (17-23 or less), or the original number of lectures (70 students) and discussions (16 students) was held, but one instructor replaced several, the students were asked to assume more responsibility, and questions and problems were introduced.

Findings

"Students in the experimental section [large lecture and problem sessions] received a better score on the final examination. . . . It further showed that the very capable student . . . does well irrespective of the method of instruction. The average student, however, shows a better performance in the experimental section." Furthermore, "the capable student does well irrespective of the individual instructor to whom he is assigned. The average student's performance, however, depends in large measure on the instructor."

6. "Large and Small Sections in College Classes," John H. Rohrer, Tulane University, Journal of Higher Education, Vol. 28, 1957, pp. 275-79.

Findings

"No statistically significant differences were observed between the small class between 23 and 31 . . . taught by the lecture or discussion methods, but differences were revealed in the achievement of students where taught by different instructors."

7. "A Comparison of Two Techniques of Laboratory Instruction (Chemistry)," Bureau of Industrial Testing and Institutional Research, The University of Omaha, fall 1956-57.

Comparison was made of the value of the conventional laboratory training in the introductory chemistry course with a lecture demonstration method of laboratory training.

Findings

"The laboratory-demonstration method is not significantly different from the individual laboratory method of teaching first semester college chemistry."

8. "An Experimental Study of Laboratory Teaching Methods in General Zoology," Hubert Frings, and Joseph K. Hichar, Pennsylvania State University, Science Education, Vol. 42, April 1958, pp. 255-62.

Three laboratory teaching methods were compared:

- (a) The regular--using a manual in which the identification and knowledge of structures, and their functions, is described and illustrated by labeled diagrams;

- (b) The drawing--unlabeled drawings used;
- (c) The physiological type--living specimens used, with experiments, experiment sheets, questions.

Findings

"... none of the three laboratory teaching methods tested ... is better than the other(s)."

Implications for Independent Study

The implication in this research for independent study is that general or pedagogical methods, in and of themselves, neither advance nor hinder independent study. Here, as with class size, it depends upon what is done with the methods. If some traditional method is used--and it may have to be--in order to be successful it will have to involve students in their own inquiries. The vehicle may have to be a large lecture class but it will also have to contrive to send individual students on intellectual errands. These errands may take the students off in as many directions as there are students. What is better, the students may be asked to address themselves to and resolve the same problem but always one big enough to instruct them in a substantial body of fact and ideas. To state the matter somewhat differently, so that there can be no misunderstanding of a matter about which there is much misunderstanding--the adoption of independent study as an academic way of life does not mean that the teacher has to abandon teaching devices to which he has become accustomed and in which he may have much expertness. It means, rather, that he should examine the uses to which the device is put and the degree to which he can get his students to extend his as well as their reach.

IV. PROBLEM-ORIENTED METHODS OR METHODS OF INQUIRY

Hypothesis C: That "problem-oriented"¹ approaches to teaching improve learning.

The research reported below supplies the first positive evidence of how teaching effectiveness can be increased by employing the methods of scholarship or of student inquiry. Whether these methods are aptly described as "problem-oriented," "problem-solving," or case study, or simply involve "critical" thinking, is not important; at least it is no more important than any one of these phrases might be in describing the research done by a faculty. The important thing is that in his learning, and in the teaching that accompanies it, the student should inquire into, rather than be instructed in a subject matter.

When teaching and learning are made forms of inquiry and a commitment is made to the principle both the teacher and the student apparently still need help with the specifics: How does one ask questions? What is an effective pattern of progression in questioning? While these problems have been identified and the demands of specificity have been recognized to the extent of producing transcripts of the questioning done in lectures, laboratories, and conferences, and of assembling copies of the examinations,² this experimentation has not been evaluated in any objective fashion.

When, added to the findings of the 12 studies reported here, one takes into account the literature on critical thinking³ and particularly the newer research on creativity, authoritarianism⁴ and the impact of teaching on student attitudes and values,⁵ independent study begins to receive impressive support--experimental

¹This includes case, and inductive-deductive methods, "teaching for the development of thinking" and of creativity.

²"The Socratic Method in Modern Dress," "The Lecture," "The Laboratory," "The 'Dialog'," and "The Examination," Winslow R. Hatch, Improving College and University Teaching, summer 1957-autumn 1958, Dr. Hatch's present address is: Office of Education, Washington 25, D.C.

³General Education: Explorations in Evaluation: The Final Report, by Paul L. Dressel, Washington, D.C.: American Council on Education, 1954.

⁴Paul Heist and T. R. McConnell, Center for the Study of Higher Education, University of California, Berkeley 4, California.

⁵"Impact of a Woman's College on Its Students," by Nevitt Sanford, Vassar College, 1957.

"The Motivation of Women for Education: The High Achievers," by Nevitt Sanford, Vassar College, 1957.

"The Passage Through College," by Mervin Freedman, The Journal of Social Issues, Vol. XII, No. 4, 1956, pp. 13-28.

"Personality Development During the College Years," by Nevitt Sanford, The Journal of Social Issues, Vol. XII, No. 4, 1956, pp. 1-70.

support. Then too, surveys made of "flexibility"" and brilliantly intuitive "think" pieces' also suggest an association between independent study and the quality of teaching and learning, or the quality of instructors and students, hence of institutions.

Not considered here is the notable success enjoyed by some institutions with case or conference methods and colloquia. Finally, as has been noted, problem-oriented courses, or projects have been made an integral part of independent study or honors programs.

The need for "reinforcement" has also been identified' as one of the problems in this kind of teaching. To realize their full potentialities, problem-oriented approaches have to be made in course after course, and, ideally, in an entire program of study. The relationship between inquiry and "creativity" has not been established in any precise way, but the first would seemingly enhance the second.

In the studies examined, and described on pages 16-23, 12 dealt with "problem-oriented" approaches to teaching. The research (including, in each instance, the conditions under which it was done and its findings) used as the basis for the hypothesis developed above, is as follows:

1. "The Problem-Oriented Approach to Teaching Psychology," W. J. McKeachie and Wesley Hiller, University of Michigan. The Journal of Educational Psychology, Vol. 45; No. 4, April 1954, pp. 224-32.

Findings

"A problem-oriented method" which made use of work sheets, designed for introductory courses and tested out in an elementary psychology course, proved "highly" effective in that the students employing this method made 42% fewer errors than the control group.

2. "An Experimental Comparison of a Conventional and a Project Centered Method of Teaching a College General Botany Course," Joseph D. Novak. The Journal of Experimental Education, Vol. XXVI, No. 3, March 1958, pp. 217-30.

Comparison was made between the conventional teaching method employed at a large State university and an approach that

*"Flexibility in the Undergraduate Curriculum," by Charles C. Cole, Jr., Lafayette College, 1958.

†"Generation of Greatness--The Idea of a University in the Age of Science," the Ninth Annual Arthur Dehon Little Memorial Lecture, Massachusetts Institute of Technology, Edward W. Lund, Cambridge, Massachusetts, May 22, 1957.

‡"Teaching for the Development of Thinking Abilities and Habits," 1957, Hope College; "An Exploration in the Teaching of Critical Thinking in General Psychology," 1957, Greenville College.

centered on more rapid presentation of material, and a 6-week period devoted to project work.

Findings

"The project-centered method was found to be at least as effective as the conventional method in teaching botanical facts and principles, though the rate of presentation was more rapid."

3. "Lectures Versus Problem Solving in Teaching Elementary Soil Science," Murray D. Dawson, Oregon State College. Science Education, Vol. 40, December 1956, pp. 395-404.

This experiment was conducted at Cornell University in a beginning soil course (Agronomy 1) with an enrollment of 140 students.

Findings

"The . . . mean gains obtained on recall of specific information . . . [were] almost identical" for students in the two groups. This confirms Weissmann's⁹ and Darrell's¹⁰ findings that the problem-solving students "made as great or greater gains in learning facts and principles," and that there was "no significant difference" in factual recall between students exposed to lectures and problem-solving situations.

"In all the recognized steps of problem solving, the students in the problem-solving groups were consistently higher than those in the lecture method recitations."

4. "A Graphics Course for Science Majors," Eugene Pare, Illinois Institute of Technology. Journal of Engineering Education, Vol. 46, No. 9, May 1956, pp. 798-801.

In a new "basic drawing course for students majoring in chemistry, mathematics, and physics . . . the student was introduced to topics through the medium of problems. . . . About forty per cent of the laboratory time was devoted to . . . problem solving." Some problems were solved by the entire class as part of a blackboard presentation. Others were separate problems distributed according to student abilities with the solutions discussed on completion. The student was also "encouraged to

⁹"Some Factors Related to the Ability to Interpret Data in Biological Science," Leah Lena Weissman, Doctoral Dissertation, University of Chicago, 1946.

¹⁰"The Lecture-Demonstration versus the Problem-Solving Method of Teaching a College-Science Course," Bernard J. Darrell, New York University. Science Education, Vol. 26, No. 3, 1942.

experiment with original patterns of his own" and more concern was shown "with the student's ability to visualize than with his drafting proficiency." Finally, "the student is confronted with an original design project of his own."

Findings

"The course has been an interesting one to teach. Apparently it has been equally stimulating to the student; after completing the course, three of our current science majors transferred to our teacher training program in drawing."

The teaching methods employed "helped to conserve time and improve presentation."

By recognizing individual differences in problem solving, "the skill in visualization of the slower student developed, and at the same time the more adept student was presented with more challenging material."

5. "Thought Stimulation by Demonstration Experiments," Hosmer W. Stone, University of California. Journal of Chemical Education, Vol. 35, No. 7, July 1958, pp. 349-51.

The method used is that of asking questions and seeking the answers by means of experiments.

Findings

"Both students and teaching assistants seemed to have responded to the thought stimulation of the demonstration, and perhaps some who had been only enrollees belonging to class 1 ('those who are content to memorize the material of the course for the purpose of regurgitation during examinations') had an inkling of how the students of class 3 ('those who . . . use . . . original thought processes') were proceeding to obtain an education in chemistry.

". . . the technique of thought-provoking questions and experimental answers can be used to stimulate original thinking in a chemistry class. Many students found pleasure in these questions and experimental answers who would otherwise have been content with the minimum of thinking involved in the 'tried and true' memory system with which they entered the course."

6. "'Case Studies' Increase Interest in Materials Laboratory," P. F. Brandenburg, University of Wichita. Journal of Engineering Education, Vol. 46, No. 7, 1956, pp. 563-64.

"The class was first divided into two groups, and problems rather than experiments were assigned to each group. Instead of

reports, the students in group A were required to write a procedure to be followed by group B. The problems were composed in a fashion to interest the students in determining why the test was necessary and what results were needed to solve the problems properly." Each problem was planned to familiarize the student with a different phase of testing so the scope of the course would not be changed and the student would get his basic background knowledge through individual problems.

Findings

"The above plan has been in operation for two years, and has been a source of satisfaction to all concerned. . . . The students now ask questions that show interest and comprehension of test methods . . . Finally, the approach used here, . . . need not be confined to testing, but can be used with equal success in many other laboratory courses."

7. "The Inductive-Deductive Method and the Physical Science Laboratory," Arnold M. Lahti, Western Washington College of Education. Journal of Experimental Education, Vol. 24, No. 3, March 1956, pp. 149-61.

At the University of Minnesota in classes numbering 338 and 395 students, Lahti experimented with four methods "to see which was most effective" in developing the student's ability to use the scientific method. These methods were:

- (a) The inductive-deductive or problem-solving method.
- (b) The historical or research method; actually a modification of Conant's Case Study approach.
- (c) The theme method in Study One, the discussion method in Study Two.
- (d) Standard, descriptive or "cookbook" method.

The experimentation was done in the laboratory only, the professor working with students individually or in small groups.

Findings

The "observational data indicated that the mean scores of the inductive-deductive method were higher on all parts of all tests in Study One. . . . On the Interpretation of Data Test . . . the historical and standard methods were a close second . . . the theme method slightly lower. . . . In the Design and Experiment Test the mean scores of the inductive-deductive method appeared to be considerably higher than those of the other three methods. . . . On the Performance Test the mean score of the inductive-deductive method was higher than the mean score of

the standard method." The historical and theme methods followed in this order.

"The same apparent pattern was noticeable in Study Two with one exception. The mean score of the discussion method on the Performance Test was considerably below the mean scores of other methods."

When this data was analyzed for "significance" the author's conclusions were:

"The educational conclusion is that the teaching methods do differ significantly in their effectiveness in developing in the student the ability to use the scientific method."

"The inductive-deductive method was successful in developing problem-solving abilities in subject matter-centered problems."

5. "Teaching for the Development of Thinking Abilities and Habits," John W. Hollenbach, Hope College, 1955.

Findings

Teaching critical thinking requires:

- (a) The mastery of the "art of asking questions," which art is often reflected in the teacher's skill with "general problem solving procedures."
- (b) The mastery of the "art of discussion--for while effective when used well, discussion often results only in the 'pooling of prejudices,' or it is often a sparring of wits between the instructor and one very vocal student . . . during which time little 'thinking' occurs among the other students."
- (c) Full faculty participation. Teaching critical thinking "cannot be the work of any one course. . . . If every course shared the responsibility . . . the overall objective might be realized."

9. "An Exploration in the Teaching of Critical Thinking in General Psychology," Edwin Lyle, Greenville College, 1957.

Procedures "purported to be effective in stimulating thought" were used in a course in general psychology.

Findings

There was no "greater degree of improvement in critical thinking ability as reflected in 'A Test of Critical Thinking, Form G,' in the experimental section as compared with the control section."

Measurable achievement in this area is not likely to come unless students are "taught for critical thinking in all of their classes for (at least) one semester." It seems improbable that instruction in one three-hour course could be expected to produce a degree of improvement which would be reflected in "A Test of Critical Thinking, Form G."

10. "An Experiment in Undergraduate Thinking," Julius Seelye Bixler. AAUP Bulletin, Vol. 43, No. 2, June 1957, pp. 282-87.

An experimental course called "Problems in Creative Thinking" was offered at Colby College for 15 students (not selected because of special ability) by faculty members from the departments of biology, mathematics, history, art, and philosophy. The faculty members attended most sessions but participated only to the extent of setting forth certain facts. The students had to create problems around these facts and solve them.

Findings

The "freshness and . . . experimental quality caught the student's interest."

Students "gained insight into their own intellectual habits . . . [they] were . . . introduced to the difficult art of asking the right questions . . . they won a sense of the importance of fact" and learned to develop generalizations based on specific facts. Through a conversational approach they saw "the social nature of thought."

11. "Some Variables Functioning in Productivity and Creativity," Calvin W. Taylor, The Second (1957) University of Utah Research Conference on the Identification of Creative Scientific Talent, pp. 3-19.

The academic history of 239 scientists in a large research center was examined.

Findings

"There is very little statistical evidence . . . to show a significant positive relationship of undergraduate grades to success as a research scientist."

12. "The Effect of Different Learning Methods in Concept Formation," Finley Carpenter, Michigan State University. Science Education, Vol. 4, October 1956, pp. 282-85.

Two types of learning were examined:

- (1) Rote memorization--"verbaliz[ing] . . . definitions and . . . memorizing discrete items."
- (2) Functional learning--"Identify[ing] common characteristics . . . to discover underlying principles that differentiate classes. They observe, manipulate materials, and test hunches in order to formulate an understanding of concepts."

Findings

- (a) "Functional learning of concepts, as defined [above] is more efficient than rote learning when measured by retention and ability to verbalize meanings of learned concepts.
- (b) "Concepts that refer to classes of material objects are more thoroughly understood when the student has an opportunity to manipulate and study the objects than where only factual information is given by lectures.
- (c) "Much . . . fruitful research on teaching methods . . . can be done without [necessarily taking into account] the learner's personality, attitudes, aptitudes, habits in learning and the particular task under an instructor . . ." Complete specificity, as it is sometimes called, is not necessary.

Implications for Independent Study

The results of research on problem solving, critical thinking, creativity and the like are heartening for independent study.

Many of the projects in independent study programs are problem-oriented. The author, with others, of the latest and most comprehensive review of independent study¹ states flatly that problem-oriented study is "a basic method for the independent student."² While more objective analysis of its worth may be needed, it is difficult to see how student inquiry, which is the essence of independent study, can be realized unless some critical or scholarly method is employed; not only in the students' projects but in their other learning experiences, be they formal or informal.

The research examined on problem-oriented approaches to teaching supports the thesis advanced by the proponents of independent study. This support comes from a somewhat unexpected quarter, and what is more important, is based upon findings which are the results of rather carefully controlled

¹ The Independent Study Program in the United States, by Robert H. Bonthius, et al. New York: Columbia University Press, 1957.

² Letter from J. Garber Drushal, College of Wooster, to W. R. Hatch, August 26, 1959, p. 5.

experiments. The disposition to introduce courses, curricula or practices designed to stimulate and accommodate independent study, is based upon feeling on the part of teachers, derived from many years of teaching unsatisfactorily, so far as they are concerned. To the extent they know their students' minds they are also of the opinion that student learning, and hence their teaching, leaves something to be desired.

V. DIRECTED VS. UNDIRECTED LEARNING

Hypothesis D: That "directed" learning is more effective than "undirected" learning.

A good estimate of the research reported here is that: "[In] the development of concepts, and in the related task of guidance of students in problem-solving, the teacher must present clues . . . for the purpose of directing the students to the successful discovery and application of essential discriminations and relationships. While, in the past, there has been some dispute as to the desirability of teacher-direction as contrasted with student self-direction, recent studies indicate . . . that both in the acquisition and transfer of concepts [and in] problem-solving . . . teacher-direction is the most effective procedure."¹

The phrase "directed learning," as used above, does not connote a kind of teaching in which the teacher develops his and his students' inquiry in ways that challenge and encourage students to think hard and long and to develop their own hypotheses or explanations.

In the studies examined, and described on pages 24-26, four deal with "directed" learning. The research (including, in each instance, the conditions under which it was done and its findings) used as the basis for the hypothesis developed above, is as follows:

1. "The Effect of Three Teaching Methods on Achievement and Motivational Outcomes in a How-to-Study Course," John D. Krumboltz and W. W. Farquhar, Michigan State University, Psychological Monographs, Vol. 71, No. 443, 1957, pp. 1-46.

Three teaching methods were experimentally examined:

- (a) Instructor-centered--meaning one which emphasized intellectual interest and employed lectures and other instructor-directed activities.
- (b) Student-centered--meaning one which took up student problems and employed student committees and student-led discussions.

¹"Experimental Studies of the Teacher's Verbal Behavior in the Development of Concepts," a statement of a research project prepared by Bernard R. Corman and John D. Krumboltz, Michigan State University, December 1, 1958.

- (c) Eclectic--meaning a combination of the above but one which employed instructor-led discussions.

Findings

"Students in the eclectic section were most highly motivated . . . the instructor-centered students were second; and the student-centered students showed the least increase. These method differences disappear when males only are analyzed, indicating the major contribution of females to these differences."

"When students are categorized on the basis of their original preference for teaching method, it is found that students who originally expressed a preference for a more cognitive-type instruction increased their self-ratings of study habits and attitudes (SSHA). Students who originally preferred a . . . student-centered type of instruction tended to lower their self-ratings."

"No significant motivational or achievement outcomes are found in relation to ability level . . . there is no tendency for bright students to have any different outcomes under one teaching method than another."

2. "The Effect of Varying Amounts and Kinds of Information as Guidance in Problem-Solving," B. R. Corman, Michigan State University. Psychological Monographs, Vol. 71, No. 431, 1957, pp. 1-21.

Findings

"For students above average in mental ability, success in solving problems increased only . . . as the amount of information given about method increased."

"For students above and below average in mental ability, information about the rule [principle] did not seem to affect results differentially."

"Information used in guidance [in problem solving] must be appropriate to the task . . . some appropriate guidance is beneficial . . . explicit instruction will prove most helpful with the more able student; less explicit instruction may be just as effective for the less able."

3. "Directed Versus Independent Discovery of Established Relations," R. C. Craig, Washington State University. Journal of Educational Psychology, Vol. 47, 1956, pp. 223-54. Dr. Craig's present address is Marquette University, Milwaukee, Wisconsin.

Findings

"The group receiving the greater direction . . . learned more relations in each of three trials."

4. "Systematic Observation of Instructor Behavior," Joseph E. Morsh, Development Report, AFPTRC-TN-56-52, Lackland Air Force Base, Texas: Air Force Personnel and Training Research Center, May 1956.

One hundred and twenty instructors in the hydraulics branch of the Aircraft Mechanics Course were observed. "The three criteria of instructor effectiveness used in the . . . study were student ratings, supervisor ratings, and student gains."

Findings

"The student-gains criterion correlated significantly with only one item of instructor behavior [verbal and non-verbal], 'instructor asks question, then designates student.'"

Implications for Independent Study

This research affirms what is obvious if the teacher is to accept the opportunity and the responsibility which are his. For independent study the implications do not seem to be so obvious, for in too many programs the teacher's role is almost casual. Actually, independent study requires greater commitment on the part of the teacher than do traditional methods. He cannot remain a bystander, a disembodied mouthpiece. His best and most sustained thinking is required, along with considerable ingenuity; for his job is to involve students in the study of problems which after much introspection appear very much worth the doing, and require considerable effort. "Directed" does not mean "dominated" but quite the reverse. The direction is that of the scholar who encourages, by example, rigorous inquiry into important matters. That independent study can dispense with the teacher or this kind of teaching is an illusion of those who have had little experience with independent study or honors programs.

VI. RESEARCH NEEDED ON THE TEACHING EFFECTIVENESS IN HIGHER EDUCATION; A SERIES OF WORKING HYPOTHESES

SINCE THE CONSENSUS in the newer research, as in older studies, is that the size of classes is not the critical factor in learning, the thing to do--considering the limited resources available to higher education for research--is to move quickly and vigorously to an examination of the critical factors. As regards the critical factors in teaching effectiveness, namely, the quality of the teaching and learning, the most promising working hypothesis is:

That the methods of scholarship ("problem-oriented" or "problem-solving" methods) increase the effectiveness of teaching, particularly when the teacher accepts a teacher's responsibility for directing learning, providing every opportunity and inducement for the student to accept a larger responsibility for his own education, and holding out always as his and their goal the maximum achievement of which they are both capable, be their ability (his and theirs) great or small, effectively engaged, or only latent.

Some of the implications or subordinate hypotheses in the above which might be examined are:

- (a) That graduate study has great relevance to teaching effectiveness.
- (b) That in graduate study a preoccupation with pedagogical method or research does not improve teaching effectiveness.
- (c) That a distinction should not be made between a teaching and a research degree.
- (d) That ceilings should not be set on graduate study, a lower one for prospective elementary and secondary teachers and higher ones for college teachers.
- (e) That too early a decision as to the stratum of a student's eventual employment and hence of his degree, is not wise.
- (f) That for maximum effectiveness teachers should not be assigned to lower or upper division or graduate instruction.
- (g) That the involvement of the teacher in research (and a distinction is made between research and pedantry) has real and salutary implications for the improvement of teaching effectiveness.
- (h) That the director of learning be considered as an art requiring appraisal by teacher and student of the effectiveness of the conditions of learning created in relation to their commonly shared goals.

- (i) That, in sum, to improve teaching one must improve:
- A teacher's scholarship,
 - A teacher's competence to involve his students in scholarly activities suited to their levels of ability and experience,
 - A teacher's ability to stimulate, endow, and release the potentiality of each of his students.

The estimate made in the first two paragraphs of this section should not be construed to mean that research on class size and pedagogical method has not been productive. Actually, its findings are more conclusive than most research on higher education and indicate clearly what it is that now needs to be done, namely, to determine through carefully designed research how best to use "scholarly" methods to improve teaching and learning. These methods, variously described as inquiry, research, case, Socratic and problem methods are variously approached. Some teachers are attracted because these methods seem to be based on good educational theory, some because they see practical advantages in them. For others these are the methods most appropriate to the scholar-teacher and good teaching. The informed layman and the administrator have sometimes taken the initiative in introducing these methods.

But the problem is larger than method. It has implications for curricular and extracurricular arrangements and requires a re-examination of the objectives of students, of teachers, and hence of institutions. Were higher education clear as to its ends it would presumably be clearer as to the desirability of its means. While, heretofore, the problem of purpose and performance has been largely a matter of belief, the newer research on student achievement appears to have developed instruments by which some of the intangibles can be measured; and one can determine whether his or the institution's purposes are in part being realized and in what degree.

In testing these hypotheses it is recommended:

- (a) That research on teaching effectiveness should be done in larger curricular and administrative contexts than has been the case to date.
- (b) Where a faculty or institution can examine but one or two hypotheses, its experimentation should be coordinated with that done on other campuses and theoretically with that done on all campuses.
- (c) That since better instruments for measuring the effectiveness of the "learning experience", and hence of teaching, are becoming available, these be used to evaluate this experimentation.

NEW DIMENSIONS
in Higher Education

Number 3

The Experimental College

by

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Clearinghouse of Studies on Higher Education
Division of Higher Education

U.S. DEPARTMENT OF
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FOREWORD

THIS is the third study in the series "New Dimensions in Higher Education." The earlier papers are entitled Independent Study and Effectiveness in Teaching. This study extends its predecessors by reporting the extent to which experimental colleges and programs make use of independent study and new approaches to teaching and learning. In addition, it concerns itself with some of the implications in these new developments for the administration of institutions of higher learning.

The materials used in preparing the paper are the plans for, and the reports of, experimental colleges and programs made in the last 2 years which are on file in the Clearinghouse of Studies on Higher Education.

As with earlier studies that have appeared in the new series, hypotheses are stated--in this instance in what amounts to a briefly annotated checklist. The items are presented as hypotheses to encourage the reader to react and possibly even to act. By these and other devices (see inside back cover) it is hoped that a more substantial body of information can be assembled and better hypotheses developed.

Homer D. Babbidge, Jr.
Assistant Commissioner
for Higher Education

INTRODUCTION

THE ATTRIBUTES of experimental programs reported in this study are not just those of experimental colleges, so called, but include programs and projects of colleges not usually thought of as "experimental." Other features may once have been thought of as experimental but they can no longer be considered such because they have become established practices, at least on the campuses where they were instituted.

No institution is identified in the body of the paper, because the primary concern of the study is with a pattern of experimentation that is more comprehensive than that which any one institution has attempted or, perhaps, contemplated. To suggest the need for action the many and varied aspects of the experimentation underway, or proposed, are identified as working hypotheses. The hypothesis has the further advantage that it sums up and evaluates and hence advances research. While some elaboration of the hypotheses is provided, they are not "defended" (1) because it is not the intent of the paper to advance any particular philosophy or program and (2) because the paper must be kept short if it is to provide a synoptic view of the problem and is to be read to the end. Whether readers concur in or violently reject an hypothesis is unimportant. The important thing is that they react and that their reactions reflect an understanding of the bearing of one factor on other factors and presumably on all.

While some factors have undoubtedly been overlooked and some may receive too much, others too little, attention, a start at least is made in assembling and weighing them. Through reader reaction it is hoped that more of the factors can be identified and better estimates made of the direction the experimentation is taking. It is even possible that some indication may be gotten as to the disposition of college faculties and administrators to experiment.

Although little more than a check list, this statement has been long in preparation (since May 1958). It is a digest of a great many pages of correspondence that the Clearinghouse of Studies on Higher Education has had with institutions interested in experimental colleges and programs.

Much interest has been shown of late in experimental colleges.¹ The reason for this is clear. Some college faculties and

¹Austin, Bard, Goddard, Hofstra, The New College (Amherst, Mount Holyoke, Smith, and the University of Massachusetts), Michigan State University at Oakland, University of Michigan at Dearborn, The University of South Florida, Wayne State University's Montiel College, and Wesleyan University.

administrators, looking realistically at the problems they face, have concluded that the reforms called for do not have much chance in an established college. Other academicians have read the recommendations of committees, some national, some local, and have noted that there is no dearth of good, or even "respectable," ideas as to what needs to be done. When, however, these same academicians look about for institutions which have put these recommendations into practice, they discover that they are few and far between, and that even those which have done something have, by and large, only "picked" at the problem. This is unfortunate because whole problems cannot be solved by partial approaches to them. The experimental college is one way, and perhaps the most practical way, in which colleges and universities can "do what they must,"³ and all that they must, if they are to have an appreciable effect on the patterns of higher education. There is, apparently, no easy way to resolve the basic problems facing higher education.

Of the many eminent educators who have spoken out about the need for experimentation, and on a broad front, the following is a representative sample: Chancellor Litchfield's⁴ estimate is that colleges and universities have become so complex and disparate that they have lost their organic sense of purpose and direction. Ordway Tead,⁵ reacting to the prospectus of New College, sees experiments such as this as the best hope of the liberal arts college, if not of higher education. Clarence Faust⁶ sums up: "[This is] a time when testing of new concepts and methods to improve the quality and management of higher education is of profound national importance." Since this testing, on the scale in which it has to be done, requires something very like an experimental college, it behooves us to see what is comprehended in such experiments.

In this compilation the several aspects of experimental colleges and programs are taken up item by item, using letters of the alphabet to identify them. While Q is the last letter employed, the list is this short only because so many subordinate problems are treated under A. Were this category broken down, the whole alphabet would have to be used and used more than once.

The first items deal with independent study (A. I., pp. 3-6) and learning theory (A. II., pp. 6-8). These items, introduced with an hypothesis, are developed at greater length than the others because they are the ones which are receiving the most attention.

³ A definition of freedom, Mortimer Adler.

⁴ "The University: Congeries or Organic Whole?" by Edward H. Litchfield, AAUP Bulletin, Sept., 1959, pp. 372-74.

⁵ "A Ten-Year Look Ahead at the Liberal Arts College," by Ordway Tead, Educational Record, 40 (1959), pp. 228-36.

⁶ "The Montith Plan," by Clarence H. Faust, Montith College, 1959.

ITEMS AND HYPOTHESES

A. That the experimental college exploit what has been learned about independent study in particular and about learning in general.

1. About Independent Study.--The research upon independent study⁶ suggests:

(1) That such programs be designed for more students, not just for the gifted and not just for upperclassmen.

(2) That they involve more, even most of the student's time, for whatever period is devoted to this type of study.

(3) That in undergraduate colleges independent study be developed in common prescribed curricula or elected liberal arts curricula or in general education programs.

(4) That the methods employed be those of sustained inquiry;⁷ of Socratic⁸ or problem⁹ methods.

(5) That the "best" aspects of established practices such as the lecture, the laboratory, and group discussion be accommodated in programs of independent study, adapting these methods to the purposes of such study.

(6) That reliance on single instruments such as student reading alone or special projects or theses be avoided.

(7) That some combination of the methods employed in independent study (and honors programs)¹⁰ and some infusion of the lecture, conference, and laboratory methods, reported in footnotes 6 and 7, be employed.^{11 12}

⁶ Independent Study, New Dimensions in Higher Education, Number 1, U.S. Office of Education (in press).

⁷ "Inquiry into Inquiry" by Winslow R. Hatch, Improving College and University Teaching, summer 1957, pp. 60-63.

⁸ "The Socratic Method in Modern Dress" by Winslow R. Hatch, Improving College and University Teaching, autumn 1957, pp. 93-99.

⁹ Effectiveness in Teaching, New Dimensions in Higher Education, Number 2, U. S. Office of Education (in press).

¹⁰ "The Context of Independent Study," Chapter VI, Independent Study, New Dimensions in Higher Education, Number 1.

¹¹ Antioch, Oberlin, Carleton, Duke, Washington State University, and the University of Michigan.

¹² "Generation of Greatness--The Idea of a University in the Age of Science," The Ninth Annual Arthur Dehon Little Memorial Lecture, Massachusetts Institute of Technology, by Edwin W. Land, Cambridge, Massachusetts, May 27, 1957.

(8) That independent study for independent study's sake, while generally held to be desirable, is not an adequate objective.

(9) That to support and make proper accommodations for independent study, provision should be made for:

(a) Early entrance into college and into those programs of students who have demonstrated their readiness.

(b) Entrance with advanced standing for these students.

(c) Placement and advancement in college on the basis of demonstrated achievement.

(d) Graduation on the basis of demonstrated achievement--rather than upon the acquisition of a prescribed number of hours and credits.

The number of institutions providing for some form of advanced placement (and early entrance) is increasing dramatically. The number of students applying for and receiving credit toward advanced placement has doubled each year for the last 3 years at those institutions which have the largest number of applicants. If it is good educational practice to encourage qualified students to enter college early or to apply for advanced placement--and there is no evidence that it is not--it would seem equally desirable to advance these students faster throughout their college careers and to graduate them sooner. In the examination program outlined below provision is made routinely for this. Earlier entrance of gifted and industrious students into the graduate school or into the world of affairs would seem logical and desirable because they should be as ready for these experiences as they were for the earlier ones.

For students whose learning is not necessarily faster or better but different (e.g., students who study abroad, independently or in organized programs, or those who read a great deal more than their colleagues during vacations or in lieu of class or continuous college attendance, or those who exploit the learning opportunities in well-chosen employments), there is at present no adequate machinery for measuring their educational growth and ordering their educational experience accordingly. This could be done routinely in the kind of examinations described on pages 5 and 6.

If the research (referred to in footnote 14) realizes its present promise, it should be possible for colleges and universities to measure the personality development of their students and their real intellectual maturity as this is reflected in their value systems and judgments.

New as the examination scheme considered here may seem for American colleges and universities, it is not really new. At Oxford, Cambridge and at many European universities, something very like it has been employed for a long, long time apparently without jeopardizing the quality of the education provided.

If it were practicable to institute some such system in the American college, a student's progress in college and his graduation from it could be determined, at least in part, by tests related to the competencies he demonstrated upon matriculation. If the examinations used upon the first generation of students were made available to prospective and entering students, the expectations of the college could be made clear in specific terms. Preparing such examinations, editing and adapting them from year to year, would also force an institution not only to evaluate its purposes, policies, and practices but to state them in precise terms.

In the preparation of these examinations one would presumably start where a beginning has already been made, i.e., with the examinations currently offered in reputable colleges, including both course and comprehensive examinations, from the freshman through the senior year. One could also exploit the experience gained in writing and grading College Entrance and Graduate Record Examinations.¹¹

Once enrolled in college, a student could present himself for any examination for which he thought he was prepared, at any time. The existence of such testing instruments should lessen the need of examining students as frequently as is the case at present and would substitute examinations prepared in part by "experts" for those now written by instructors who do not, for the most part, pretend to have any great competence in testing or learning theory and who often give little thought to the basic purposes (apart from "content learning") of higher education. Since it has been estimated that course examinations use up some 15 to 20 percent of a teacher's time and since poorly designed examinations can blunt or misdirect learning, experimentation with examinations has interesting economic as well as educational implications.

(10) That the purposes of independent study and of the above provisions (9a, b, c, and d) may be advanced by "comprehensive" or "field" examinations which test the students' real levels of achievement.

The degree to which the faculty and the administration (i.e., the college) achieve their objectives, might also be determined if these instruments were designed to test the "intangibles" which are a part of learning and of higher education. These "intangibles" are often stated as institutional purposes in college charters, on university seals, in catalogs and promotional literature, and receive much attention in public utterances. These purposes are variously stated as the "pursuit of excellence" or of "truth" or "knowledge;" the mastery of intellectual and related skills such as "unfettered," "critical," or "creative" thought; the inculcation of "democratic," "Christian," or "ethical" values; the cultivation of the "well-rounded" man or of "responsible" or "world" citizenship; or the development of "leadership." The extent to which an institution meets its stated purposes--these or others--is quite unknown to most colleges

¹¹College Entrance Examination Board, Frank H. Bowles, Princeton, New Jersey.

and universities, and institutions are apparently content to leave it this way because no very strenuous effort is currently being made to determine how well these purposes are met.

Instruments which measure some of these competencies and qualities have been developed.¹⁴ When, and if, their validity is demonstrated, these tests and interviewing techniques could be assembled in a single battery. Were such a battery used to reinforce comprehensive achievement tests, admission to college could be determined, in part, by the student's performance on these tests.

The purposes of independent study are, first, to encourage in students a lively appreciation of, and some competence in, inquiry. If inquiry is made a goal, "problem solving" methods are good insurance that critical methods will be used by both the teacher and the student and that the learning will not be by rote. It should be emphasized that there is not a method of inquiry but many methods. The "best" method is that which is most appropriate to the subject and is best suited to the talents of the teacher and his students. A second but important objective is to realize the purposes of higher education which, while generally honored, are not so generally practiced.

While the experimental and the experimentally minded college is giving independent study its first real test and while more effective means of appraising the learning of students may now be at hand, the successful use of this method and of these instruments requires a curricular and pedagogical context that reflects something of what is known about learning theory.

II. About Learning.--The research on learning and its practice (teaching)¹⁵ suggests:

(1) That there is educational advantage in common or core curricula. When all students take the same courses in the same order, teaching is more efficient. Learning also appears to be enhanced because when a common body of information is shared by students there is more communication between students and hence more learning by students. While extraneous to our argument, if not to the decisions of administrators, prescription is economical of both staff time and space in that the size of classes can be predetermined and set at optimum and, if necessary, at higher levels.

¹⁴ "The Passage Through College" by Mervin B. Freedman, *The Journal of Social Issues*, Vol. XII, No. 4, 1956, pp. 13-28. "Basic Traits in Intellectual Performance" by J. P. Guilford, *The Second (1957) University of Utah Research Conference in the Identification of Creative Scientific Talent*, 1958, pp. 86-81. "Recent Creativity Studies at Educational Testing Service" by John R. Mills, *The Second (1957) University of Utah Research Conference in the Identification of Creative Scientific Talent*, 1958, pp. 181-91. "A Study of Diversity in Higher Education" by T. R. McConnell, Donald Brown, Paul Heist, Harold Webster, et al., Center for the Study of Higher Education, 1958, University of California. "The Identification of Creative Scientific Talent" by Calvin W. Taylor, 1956-57, University of Utah. "Impact of a Women's College on Its Students" by Nevitt Sanford, Mary Conover Mellon Foundation, 1957, Vassar College.

¹⁵ Effectiveness in Teaching, *New Dimensions in Higher Education*, Number 2.

(2) That the curricula of experimental colleges and programs be prescribed for a part of the first two or for all four of the undergraduate years.

In the context described here, the individual differences of students as to interests, ability, and industry are accommodated in independent study. As a matter of fact, independent study provides very nearly all the latitude a student can exploit. Through independent study a student can follow his interests where they lead and extend his knowledge beyond that which he shares with other students. Such uncommon ability as he may possess can be used to push his personal inquiry into material his fellows may not reach. For students of unusual ability and industry such study could result in a natural type of "acceleration." Objective appraisal of the student's achievements could, of course, be made through the use of the comprehensive or field examinations mentioned earlier.

(3) That the more similar the methods employed from course to course, the greater is the transfer of knowledge.

When general use is made of independent study there is much similarity in the methods employed. Since the methods of inquiry employed from subject to subject and from instructor to instructor differ, there need be no "strait-jacketing" of either the teacher or the taught.

(4) That if the objectives of the teachers of different courses are similar and all are concerned with integration, the interrelationships between courses are more obvious for students and the ease and amount of their learning is greater.

Actually the integration between subjects and courses can be pushed to the point where a series of courses becomes, in fact, course of study, a single interrelated whole. When this happens individual courses become subassemblies that are taught separately for the convenience of teachers, students, and administrators. Finally, courses lacking a common *raison d'être* give students little direction as to the nature of the inquiry to which each course contributes--of common undergirding theories or postulates, that are being examined. The organization of curricula into discrete courses has another disadvantage in that it tends to support a kind of academic "featherbedding." Given a course, hours of credit, and prerequisites, there is an understandable disposition on the part of the teacher to expand the course and so justify the credits and himself. He tends to make the course his own, and to think of its content and credits as inviolate. The highly personal nature of some courses--the mirror of the instructor--tends to separate them from the curriculum and the teacher from his colleagues. Finally, as the virtues and the demands of individual courses are magnified, institutional goals become obscured. The disposition in experimental programs and colleges is to:

(a) Make the planning of all courses, general and specialized, a collective effort;



(b) Insist that separate courses reinforce each other, each course acquiring thereby an additional content;

(c) Change the credit for courses from year to year as the requirements of the curriculum and of the students dictate.

As a consequence the convention of "courses" is attenuated and the concept of a "faculty" is undergoing a subtle but important change. In designing or redesigning the "new" curricula, the concern of a faculty is with, first, the theoretical fabric of the subject matters to be taught. Its second responsibility is to frame the problems or topics whose study is most likely to involve the students in the examination of these theories or postulates and, third, to examine and then exploit the curricular reaches of those theories and postulates. The resultant synthesis achieves what is considered to be the most sophisticated kind of integration, "conceptual" integration. The prerequisites of fact and experience required of the students must, of course, be taken into account and the faculty must insist that problems and topics be studied in such depth that the student achieves a subject matter mastery no less than, and preferably greater than, he would have acquired in conventional curricula.

Experimentation in experimental colleges and programs is not, however, confined to pedagogical and curricular problems. There is also a disposition to experiment with new administrative devices. The following are some of the hypotheses being examined:

B. That, while the academic dean must be sensitive to non-academic matters, he must be able to provide academic leadership.

To this end an attempt is made to make a distinction between the academic and the nonacademic; to charge the dean with a clear responsibility for the former and to provide an associate to relieve him of the latter; to insist that the dean do some teaching or research.

The modern American college and university--to judge from the studies made and reported to the Clearinghouse--is preoccupied with managerial problems. The aspects of management receiving most attention seem to be those concerned not so much with learning as with "publics" and "things"--with donors, legislators, alumni; with cubic and square footages; with plant and efficiency of operations; with "units of productivity;" with credit hours and ratios; and with balance sheets. This may be necessary, but it is unfortunate.

C. That the faculty accept a larger responsibility in academic administration.

American higher education is thought by some to be over-administered. The above accommodation increases a faculty's "load" but it is clearly one antidote for over-administration. How this is done and how much responsibility a faculty can or should accept differs from institution to institution.

D. That there be less departmentalization in these colleges.

This development may take the form of divisional or area organization or the faculty may be organized into teams consisting of those currently instructing the same students. Several disciplines are characteristically represented on these teams. Their size is determined by manageability. The administration of the 'team' is usually rotated.

The reason for this is the very general recognition that knowledge is being accumulated at such a rate that a unique competence is possible only in a relatively narrow field. The need for the specialist to see the implications in what he is doing is, however, just as great as ever. For the specialist to achieve perspective by intellectual association in a field as circumscribed as a department is, however, becoming a poorer and poorer expedient. Furthermore, some of the more promising new fields of study are developing on the borders of departmental subject matters. This makes it necessary for these specialists to acquire some knowledge of several subject matters to understand the borders they are exploring. The department has, accordingly, become something of an anachronism. Another consequence of departmental organization is that special departmental interests become for some synonymous with the institution's best interests. The new structure is usually determined by the objectives of the college and by the size of its faculty. A feature stressed is the desirability of having the organization reflect the actual working contacts of faculty members.

E. That provision be made for the distribution of a teacher's load between lower and upper division courses, between general courses and specialized or professional courses; that each instructor be given an opportunity for research.

It is held by many that the edge of a faculty's scholarship can be dulled by repetitive assignment to either lower or upper division, or to general or specialized courses. It is even thought by some that general or lower division instruction can improve the scholarship of a faculty; that a steady diet of advanced or specialized instruction can be stultifying.

Since the specialist has neither the competence nor the time to do research in all the fields that impinge on his specialty, the only practical solution for him, if he is to see his work in perspective, is to make the time he spends teaching work for him, by teaching outside of his specialty without, of course, straying so far that he cannot bring his scholarship to bear. It is thought that specialists can profit, even as specialists, by teaching in introductory courses. This is a new application of an old aphorism--that teaching instructs the teacher.

Teaching that does not involve some research is a poor kind of teaching and research that does not have some relevance to teaching may be inappropriate to institutions of higher education.

F. That the salaries of experimental faculties should reflect the improvements and savings they are able to work.

Since gains in the quality and quantity of student learning have to be demonstrated before any monetary balance sheet is struck

off, irresponsible experimentation is discouraged. A good many pedagogical and curricular innovations have proven to be as good as and potentially better than those employed at present. By some fortunate turn of fate they have also proven to be more economical of time and space." It is this experience that encourages the hope that faculties can improve their teaching and their salaries at the same time. While there are obvious dangers in "buying" a faculty's participation in an experimental program--or any program--it is also obvious that teachers are men and women before they are selfless educators. But basically what appears to be an appeal to the personal interests of teachers is actually an ethical challenge, for it invites them to help, as they can, to provide those salaries without which it will be difficult to improve the status and hence the effectiveness of higher education.

While the motivation of experimental faculties is their conviction that there is a better way to educate than that provided in conventional programs, none are insensible to the fact that their colleges or programs, must be economically operated. Actually, the experimental college may make a notable contribution to the economics of higher education by demonstrating that a better education can be provided for the same or even for less money than traditional methods demand. These faculties may even come up with a more satisfactory unit than credit hours by which the productivity of higher education can be measured.

G. That the budgets provided experimental colleges and programs be comparable to those required of high quality undergraduate institutions with traditional programs.

Since the faculties in experimental programs tend to be "stockholders in the corporation," sharing in the educational profits realized through their collective efforts, a good deal of the unessential educational trappings are likely to be sloughed off. With the "essentials," however, there is no disposition to compromise.

H. That no distinction be made in experimental faculties as to academic rank.

To the extent status in a college or university is acquired by reason of rank, to this extent it is likely to be used irresponsibly--in power politics, for example. Sometimes rank is used to support authority--this despite the fact that authority is generally thought to be a poor substitute for intellectual persuasion. The above device simply recognizes what should be apparent in an intellectual community, namely, that rank or title has no intrinsic worth. By detaching considerations of rank from those of salary, it is hoped that the academician's interest in rank, and in the problems it creates, can be attenuated.

Reference is made to independent study, some applications of television, early entrance and advanced placement (provided the student is permitted to graduate sooner), and to the findings that while class size is a factor in good teaching and learning it is not the critical factor, i.e., it is not as critical as the quality of the teaching and learning.

I. That members of these faculties be given tenure for an initial 3-year term, to be reviewed at the end of such a period.

The concern of a faculty for security is not a pleasant thing to contemplate. (Studies on the conditions of teachers' employment usually labor under the handicap that they must include security and treat it as a desirable attribute.) Nor is the disposition of administrators to postpone the granting of tenure always seemly. Certainly it is not flattering if their reticence is occasioned by the fact that they made poor appointments. The above is a middle ground between faculty and administrative irresponsibility.

J. That all members of the faculty be released on a staggered basis at the end of a 3-year term (see I.), and that salaries be negotiated at the beginning of each term taking into account all the factors involved.

K. That sabbatical leaves be provided each fourth year (or between terms), these leaves to be earned by teaching three semesters per year.

As regards H, I, J, and K, annual reviews and the employment of elaborate, time-consuming and hence expensive merit systems for determining the qualifications of individual faculty members for advancement in rank, for granting of tenure, for salary increments, and for sabbaticals could, it is hoped, be obviated, in part, if this were done but once every 3 years and if the criteria employed were, very largely, the achievements made by a teacher's students. This information would be routinely available in the record made by an instructor's students if colleges employed comprehensive or field examinations of the sort described in A. I. 10 (pp. 5 and 6).

Analyses of the workloads of academic deans and department chairmen show that a great deal of their time is given to personnel administration. In the evaluation of teaching effectiveness some administrators, in the interest of fairness and objectivity, involve both students and faculty in the development of ratings. While inquiries made of the Clearinghouse indicate that there is much interest in student and faculty evaluation, educators are still looking for better and less onerous ways of recognizing, rewarding, and hence encouraging better teaching. Short of across-the-board raises, which have their defenders, and make but limited demands upon an administrator's courage and time, there may be some such middle ground as the one described here. In this system advantage is taken of student evaluation but it is come by unobtrusively. A critical assumption in this plan is that the examinations used measure the quality of the teaching to which the students are exposed. The likelihood of student abuse of the system is small, for the only way students can help a professor to "advancement and pay" is to do well on their examinations and the only way they can hurt him is to do badly, which is something they are not likely to do intentionally.

I. That the determination of teaching load, under the conditions outlined in (par. F), can be largely left to the individual instructor.

If the teaching method used is independent study, one can afford to employ a prescribed curriculum. In this event the student-teacher ratios can be settled upon in advance. This arrangement does not force an administration to wrestle with the "imponderables" which are so much a part of the problem of determining what constitutes a desirable teaching load. Since salaries under the system described (pp. 9-10) are, in part, determined by the achievements of a teacher's students, such a faculty is not likely to shirk its teaching.

M. That the college operate on a three semester (term) basis, each term to be of fourteen weeks duration, separated by three 23- to 24-day vacation-reading periods.

This arrangement permits an increase in teachers' salaries of 33 percent on an eleven-month basis and enables students to complete their undergraduate education in 3 calendar years or less.

In a society where 16 to 20 or more years are spent preparing professional people for their careers, reducing the amount of time spent in preparation increases the span of a professional person's usefulness. Other experiments with acceleration hold out the hope that something can be done about this problem.

N. That the same opportunities for research and professional development be provided to all instructors regardless of age, rank, and tenure.

The practice of providing full professors with more time for research than assistant professors has presumably come about because full professors have had more time to justify their case for this form of recognition. Certainly it would be hard to justify the implicit assumption that the research of junior professors is, in and of itself, less good because they are younger. In terms of their teaching function, the inference in present practice is that the junior professor is more effective than the senior professor and can be less readily spared.

O. That to the extent it applied to institutions offering experimental programs there be no punitive out-of-State tuition fees; that national representation be encouraged in public and private colleges; that no elaborate institutional scholarship program be used to encourage students to enroll in a given institution but that all institutions let their case rest on the quality of their program.

While obeisance is made to equality of educational opportunity in this country, some institutions of higher education unwittingly perhaps, but quite effectively, limit this opportunity. Out-of-State tuition is a case in point. Where the choice for an in-State student is between the State university or other publicly supported college whose tuition fees are relatively low and comparable schools in other States whose fees are two or three times as

great, he often elects to go to the State university or in-State college. Since few States can provide the best educational experience in all fields of human endeavor, the good student, whose grades would permit him to go elsewhere but are not so outstanding as to win him a scholarship, goes to a school less good for him (and less good for the State and the Nation). Since it is often the specialized training which a State is unable to provide, or provides less well, which that State needs most critically, it is in its best interest to consult with other States, and preferably all States, and ensure equality of opportunity for all of the students living within its boundaries. An odd twist is given this problem by the fact that while some institutions discourage out-of-State students, others spend millions trying to attract them.

P. That work-study options be provided in experimental programs and colleges.

Work-study is an effective educational device. As a way to finance one's education its pay-as-you-go principle has an advantage not found in loan programs, namely, that it does not saddle undergraduate students--and particularly the more successful ones--with debts that discourage advanced study.

Q. That the plant of experimental colleges and programs be developed around a large library-student union building where provision is made for many double-duty conference rooms, some large lecture rooms, complete with audiovisual equipment, large laboratories for class use and desk space for individual student use. A desirable arrangement is to have the staff officed in this building and to provide many student carrels.

While the library is typically described as the heart of the campus it is often more like its liver for it is often a large structure whose significance lies in the potential it may not be called upon to release. What is proposed here is that the library be made the heart of the academic enterprise, in fact, and that it be made to deliver something like its full potential. The student union may seem to be an unlikely place for scholarship. To the extent that this is true it has departed from an ancient university tradition.

CONCLUSION

Not all of the experimentation done, or all that which needs to be done, has been identified in this piece. The intent of the paper is to suggest the kind of experiments that are being made, or might be made, by an experimental college or in experimental programs. The factors identified represent some of the factors that must be kept in mind if such experimentation is to take into account the many variables, some of which are critical.

**NEW DIMENSIONS
in Higher Education**

Number 12

What Standards Do We Raise?

by

Winslow R. Hatch, *Director*

Clearinghouse of Studies on Higher Education

Division of Higher Education

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
ANTHONY J. CHLEBIEZSE, *Secretary*

Office of Education
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New Dimensions in Higher Education

Winslow R. Hatch, *Coordinator of the Series and Director,*
Clearinghouse of Studies on Higher Education

THE SERIES *New Dimensions in Higher Education* deals with developments of significance to colleges and universities and all persons interested in improving the quality of higher education. These developments are examined one at a time but in the context of a series. Each number is intended, within the bounds of reasonable brevity, to provide the hurried reader with a summary and interpretation of a substantial body of information. To the extent feasible, detailed studies are cited, needed additional research is identified, and recommendations are suggested. Background materials include reports on file in the Office of Education's Clearinghouse of Studies on Higher Education, published literature in the field, and the counsel of educators who are recognized authorities in the subjects treated. In order that the series may be increasingly useful to colleges and universities, reader reactions are welcomed.

A detailed listing of previous numbers of the series appears inside the back cover.

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FOREWORD

EXCELLENCE or quality in education has received and is receiving much attention. It lies very close to the national interest; so it is not surprising that the U.S. Office of Education should be identified with this effort. A substantial contribution has been made by the Office in its New Dimensions in Higher Education series. While only one of the first 11 studies had quality in its title (No. 7, *Quest for Quality*), all were concerned with developments that enhance it. Two subsequent numbers, already in manuscript, stress the examination of certain critical aspects of quality. One describes ways in which undergraduate colleges have improved their programs. The other pinpoints the essence of the problem: How does one improve learning and teaching?

This study examines what seem to be critical problems: What, specifically, are the criteria of quality? What, explicitly, do we propose to improve? How does one best bring about this improvement? How does one best serve those who would like to act but do not know how or to what purpose?

In this regard, the Office can be helpful. In its Clearinghouse of Studies on Higher Education is a wealth of studies whose import for the problems before us can be examined quickly and judiciously.

The early drafts of this manuscript were in considerable demand, for the subject was timely and discussion of it so needed. They were even used as background material for several conferences. The final manuscript has benefited, in that such audiences helped to shape it. We trust that readers will continue to shape the study by volunteering data, by pointing out shortcomings, and by suggesting future action.

Editorial assistance in the preparation of the final manuscript was provided by Alice L. Richards of the Office of Education staff.

R. ORIN CORNETT
*Acting Assistant Commissioner
for Higher Education*

HAROLD A. HASWELL, *Director
Higher Education Programs Branch*

III

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I. The Problem of Standards

IN PONDERING the problems of quality one needs to know what research and experimentation have been done. In examining this research one should weigh each bit of evidence and fit it into a composite whole, a whole that reflects the emerging shape of higher education. This is what the New Dimensions series has attempted to do. This publication reflects the perspective of the series and hopefully builds upon it. When one studies the problems of quality in this way, he discovers that the attack upon quality has been slowed because first things simply have not always been put first. These first things appear to be: (1) The desirability of defining quality as explicitly as possible and of developing a priority of importance and of need with regard to these elements; and (2) the need to act in accordance with these priorities.

In support of such a program, the need is for *information* and for *discipline*.

No attempt is made here to be complete or definitive. Rather, wherever possible, the procedure is to refer the reader to recent reviews and to suggest the kinds of information that are available. To do otherwise would be to lose the reader in detail and to distract him from the business at hand, namely, the examination of a thesis. The word "information" is deliberately used in this statement because not all of the supporting data are evidence in the sense that they are derived from research. Some of the information is itself experiential rather than experimental in origin.

Similarly, the standards derived from this information do not represent all that might be adduced. They are but *some* of the standards and are limited to those applicable to undergraduate colleges and to those that can be distilled out of the literature identified in a later section.¹ It should also be emphasized that these standards are thought of as hypotheses. It is hoped that they may become *working* hypotheses—hypotheses based on a substantial body of information. Finally, these standards should not be thought of as constituting formulas that supply neat or pat answers, either singly or in the aggregate.

¹ See section III.

A surprising thing about the standards—at least surprising to the author— is that they are apparently as applicable to one institution as to another, and to one student as to another, provided, of course, that the concern of the institution or of the student is for higher education. When the hopes of institutions and individuals can be fulfilled by common purposes, the institution, the individual, and the general welfare are happily joined. When common aspirations supplant individual accommodations, the problem also becomes more manageable.

Several publics have shown an interest in these standards: prospective college students and their parents; high school teachers and counselors; college teachers and administrators; State, regional, and national associations and agencies; legislators; alumni; and donors. Even the general public can be presumed to be interested. There is a growing appreciation that the quality of higher education lies close to the public welfare. On the one hand, there is a wealth of information about higher education; on the other, a growing number of questions are being asked about what constitutes quality. However, when it comes to finding specific information to answer these questions, what passes as proper concern for excellence in one institution might be considered only a pursuit of mediocrity in another with higher basic standards.

Although no “neat” answers are supplied in this publication, and complete answers are not attempted, any reader interested enough to study the reports to which references are made will find that more data exist and are available than he may have realized, and that much of it goes to the heart of the problem, to the real issues. By making his own inquiries, the reader can get considerable data on the schools in which he is particularly interested. While collective efforts may be necessary to get some of the information required, this poses no insurmountable problem to those who want it badly enough to organize their pursuit. The standards suggested here, while applicable to “high productivity”² institutions, are perhaps even more useful and relevant in relation to the quality of offerings at the less productive ones.

Finally, it should be observed that there is nothing about the approach of this study that loads the analysis in favor of colleges with selected student bodies. The less selective institution can be as effective as the selective one, for example, if it will stop “telling” its students and improve its “teaching” and the student’s learning. Actually, the less selective the college is, the more the institution needs to

² See “Baccalaureate Origins” references, section III.

do this. The same would appear to be true of the rest of the standards. As a matter of fact, the more an institution has been under-rated, the more it should find these standards attractive, because they introduce a corrective factor. In sum, they help poor but deserving institutions improve their relative position.

The measure of what a college does for its students is reflected not so much in what it does for its best students as in what it does for the whole range of students, from good to poor. Brilliant students often seem to make their mark in college and in the world in spite of their training. This is much less true of poorer students, or of good but poorly trained students. Disadvantaged students are the supreme challenge, and an institution that succeeds here has proved its case. Accordingly, colleges should know, and prospective students should know, what institutions are able to do not just for part but for *all* of their students.

Although few of the standards are new—many are quite old—it is hoped that they may have a new impact. The interest of prospective students and of their parents, counselors, and high school teachers in the quality of collegiate programs seems to be greater than it has been for some time. Legislators are showing a new concern for the quality of the colleges they support and sponsor. The same is true for donors, labor, industry, and the general public—and for the best of reasons. Society's demands are also greater and the world situation is more critical. Combined with the new emphasis on the need for higher education, enough self-interest would appear to be involved on the part of students, teachers, parents, the general public, and Government to encourage the hope that attention may at last be given bona fide standards of quality and that these standards may have an appeal that is general enough to sustain the present quality drive. Quality, undefined or ill-defined, can result in raising a whole set of false standards and in diverting both our attention and our support to them.

II. Standards of Quality

THERE HAS BEEN much talk about standards and about raising standards in American schools and colleges. Much less attention has been given to the problem of *what* these standards are. Louis Benezet asks whether excellence is necessarily manifested in "a high College Board aptitude score, a pattern of so many courses in prescribed subjects, an experience in a private school that specialized in this preparation, and admission by one of some twenty-five 'prestige' colleges? . . . If that impression is making headway—and I believe it is—then we have a long way to go in our search for . . . Excellence. . . ."¹

There are some other questions that also need asking. How helpful or responsible is it—

1. To endorse greater rigor in the selection of prospective teachers without suggesting what is meant by rigor or quality?
2. To endorse guidance without indicating what constitutes good counseling?
3. To recommend greater clarity and specificity with regard to institutional and program objectives without indicating what some of these specific objectives are?
4. To suggest that these objectives, still quite unidentified, constitute a desirable rationale for a school's admissions, curriculum, and evaluation practices?
5. To urge upon a college the desirability of determining what it considers to be the qualities desired in teachers and, hence, the qualifications of teachers without suggesting what at least some of these qualities and qualifications are?
6. To recommend an examination of the kinds and levels of tasks required of teachers without suggesting what they should be?
7. To continue to talk primarily about the need for more teachers when the likelihood is that the problem cannot be solved without improving the ways in which teachers are used?
8. To urge that able students be selected without defining what is meant by an "able student" and without indicating how the selection will be made?

The questions above are suggested by those attending numerous meetings of national committees dealing with faculty personnel problems and policies. Since less learned and less educationally sophisti-

¹ Louis T. Benezet. "The Trouble with Excellence," *Saturday Review, Education Supplement*, Oct. 21, 1961.

ated persons than college administrators and teachers are likely to insist on greater quality in education without defining it, would it not be in the interest of those who can define it to do so?

What are the standards by which good teachers, good students, and, hence, good colleges can judge? Discussed here are 21 standards of quality derived from an examination of materials on file in the Clearinghouse of Studies on Higher Education and, more specifically, from the literature described in section III.

Standard 1

Quality may be indicated by a college's disposition to make a distinction between the acquisition (acquiry) and the examination (inquiry) of information. It is manifested in its success in getting students to accept a larger role in "acquiry" and in getting its faculty to make their teaching a joint "inquiry."

There is much evidence, both old and new, for the conclusion that when it comes to the acquisition of information students can do this better without the personal intercession of a teacher. The evidence in support of this statement is described later in this report and the implications of this research for teachers are clear. But how, practically, is a student, a counselor, or a parent to determine which colleges understand these problems and are doing something about them? The institutions will be those that:

- a. Give the fewest expository lectures. This does not mean that they will eschew lectures; they simply will avoid as much exposition as possible in favor of more effective techniques. The number of students involved may actually be large, but the approach will feature Socratic, case, or problem-oriented presentations.*
- b. Provide laboratory instruction which is experimental or problem-oriented.*
- c. Provide for group conferences, seminars, colloquia, and the like, of a quality and number that fully exploit the human resources of the institution.*
- d. Provide examinations that are appropriate in that they minimize rote memorization and maximize critical thinking.*

The condition of learning met in *a* and *b* above is that learning will increase to the extent that students are able to determine, frequently and in detail, just how well they are doing.

The principle of learning involved in *c* is that "active learning is more efficient than passive learning. . . . Discussion . . . may help develop critical thinking because students do the thinking and there is an opportunity to check their thinking against others. . . . The

most commonly used discussion method is probably developmental discussion . . . directed to a definite goal such as solution of a problem. . . . Problem solving is improved when the discussion leader takes the problem in steps. . . . This . . . not only gives the discussion more focus but also helps students become aware of their progress."²

The applicable condition of learning in *d* is that "if we base our grades on memorization of details, students will memorize the text. . . . To develop an interest in thinking we have to make it satisfying. . . . Experience in solving problems within the student's ken is essential."³

Standard 2

Quality may be indicated in colleges that provide adequate learning resources materials and with students that use them.

Theoretically, these purposes are served by the library, but in many instances the library is a repository of books only. It is often an adjunct to rather than an integral part of the learning process. Institutions which are reexamining their "informing" function are beginning to assemble learning resources centers or libraries adequate to the requirements of today's students. These repositories include taped and televised lectures, programmed learning materials, and pictures—still or moving. Were these centers or libraries organized as Land⁴ suggests, and were they given the educational setting described by Brumbaugh in his prospectus for the new university at Boca Raton,⁵ students should be able to acquire more facts on their own initiative than their professors could cram into their lectures. When such provisions are made for the "informing" of students, a faculty can reexamine its role and determine how many classes need to be "taught." In general, the more a student informs himself, the less his instructor has to do the informing. The instructor can, accordingly, "teach" to a degree and with an intensity not otherwise possible.

² Wilbert J. McKeachie, "Recitation and Discussion," a paper published in *Achieve Learning Objectives* (a report of the Summer Institute on Effective Teaching for Young Engineering Teachers, Aug. 28–Sept. 8, 1960). University Park, Pa.: The Pennsylvania State University, 1960, p. F-6, 7, 27, and 31.

³ *Ibid.*, p. F-3 and 7.

⁴ Edwin H. Land, *Generation of Greatness—The Idea of a University in the Age of Science. The Ninth Annual Arthur Dehon Little Memorial Lecture*. Cambridge, Mass.: Massachusetts Institute of Technology, May 22, 1957.

⁵ "Report of the Planning Commission for a New University at Boca Raton," Board of Control of the State Board of Education, Tallahassee, Fla., 1961, 38 p. (Processed).

Standard 3

Quality may be indicated in colleges that provide the least remedial instruction.

The point here is that the more remedial work a student takes the less higher education he gets during a given span of time. The more remedial work given, the less time the faculty has for college-level instruction.

Institutions alert to this problem are trying to introduce correctives. Greater selectivity is being shown but, as Benezet points out, the criteria employed may not be very good. A beginning has been made in providing "programed instruction" in lieu of "remedial" instruction so that greater readiness can be insisted upon. Institutions for whom remedial instruction is an acute problem may have found in programed learning the instrument that will permit them to enhance their programs materially.

Standard 4

Quality may be indicated in colleges whose students do extensive reading and, specifically, a great deal of general reading on their own initiative.

While this standard would appear to be self-evident, its point might be driven home were colleges to give more study to the circulation records in their libraries. Some institutions are not very successful in encouraging their students to read. Records at most institutions show the average number of books checked out from their college libraries per year, and faculties would do well to study these reports. Many institutions also have established supplementary reading centers in student living quarters. Furthermore, the advent of inexpensive paperbacks of high caliber has contributed to the feasibility of students developing their own collections.*

Standard 5

Quality may be indicated in colleges whose students average 30 to 45 clock hours per week in out-of-class study.

While this standard has no bearing on the quality of the study done, it does indicate whether students have a serious purpose and a

* Indeed, some colleges use a special fund to keep student centers stocked with paperbacks, on the theory that the cost of unreturned books may be a valuable contribution to student learning resources.

disposition to resist leveling influences, two characteristics of highly productive colleges. In summary, it says a good deal about the climate of the college. It also provides a measure of the kind of teaching done because studies⁷ show that some teachers are more successful in getting their students to increase the time devoted to study than are others.

The position of the student along the acquiry-inquiry axis (items 1 and 2, section III) is also indicated by such data because if students are not studying much they are not learning as much as they might. What the student is learning, or how well he is learning it, is, of course, not indicated by these figures because they deal only with hours.

The expectancy of some institutions is that, for every hour of credit given in a course, the student will spend 3 hours per week in out-of-class study. Other institutions expect only 2 hours of out-of-class study for each class hour. For a 15-credit-hour load, this would mean 45 hours per week in the first instance, 30 in the second. In a questionnaire circulated among student body presidents and other student body leaders (all of whom were upperclassmen), the mean number of hours spent in class preparation was 28.⁸ The range was from 6 to 50 hours. Ten hours or fewer per week were spent in out-of-class study by three percent of those questioned. Forty hours or more per week were spent by 17 percent.

In another study—one dealing with college seniors, all of whom were good students and had made definite plans for graduate study—the mean number of hours spent in out-of-class study was 26 per week.⁹ The range was from 5 to 40 hours per week. Ten hours or fewer were spent in such study by 5 percent of the students and 40 hours per week were spent by 14 percent.

The average amount of time spent in class preparation by the upperclassmen in these two studies—superior individuals in both instances, and better-than-average students in at least the second instance—was, then, 28 and 26 hours. For freshmen and sophomores, and for the average students, the time spent in out-of-class study may be considerably less.

Still another study shows that the students in an upperclass dormitory spent 33 hours per week in out-of-class study, those in a freshman dormitory 27 hours, and those in a fraternity 18 hours.¹⁰

⁷ René N. Ballard, "The Study Activity of Students," *Improving College and University Teaching*, Vol. IX, No. 1, Spring 1961, p. 64-66.

⁸ Data reported in a poll of student body presidents at the Convocation of the National Student Association, held in Urbana, Illinois, in 1960.

⁹ Unpublished data reported to the author.

¹⁰ Ballard, op. cit.

Standard 6

Quality may be indicated in colleges that are most successful in involving their students in independent study.¹¹

Better than any other current phrase, "independent study" suggests the active involvement of students. Used in this sense and carrying this connotation, it derives its support in large part from the "acquiry" literature (see item 1, section III). But "inquiry" is a more precise term. It suggests the quality that should be sought in independent study. It emphasizes the examination of information rather than its acquisition and suggests the considerable involvement of the teacher. Inquiry includes honors, independent study (of the Ford-supported utilization variety), and some other forms of teaching techniques, such as problem-oriented and guided discovery. The emphasis upon student inquiry in honors and independent study programs and in virtually every experimental college reinforces this choice of a term. On the mistaken belief that independent study or inquiry is an end in itself, it is managed poorly on many campuses. It is managed well at only a relatively few colleges. It is done well when:

- a. It is begun in the freshman year.
- b. The inquiries of the students deal with significant issues, problems, or principles.
- c. Critical methods of instruction and of study are used throughout the course.
- d. The college offers many such courses.
- e. The faculty's scholarship is equal to the very considerable requirements placed upon it by such study.

The principles of learning involved in independent study and a measure of their application are: (1) the degree to which "the range of individual differences [are] . . . accommodated," (2) the degree to which the "thinking, feeling, or doing" is that of the learner, and (8) the degree to which "the learner continues [his] learning beyond the time when a teacher is available."¹² It takes a good faculty to

¹¹ For colleges in which there are such programs see: Seymour Harris, ed., "Higher Education in the United States. The Economic Problems," *The Review of Economics and Statistics, Supplement*. August 1960, Vol. XLII, No. 3, Part 2.

Elizabeth Paschal, *Encouraging the Excellent*. New York: Fund for the Advancement of Education, Higher Education.

Winslow R. Hatch, *The Experimental College*, New Dimensions in Higher Education, No. 3, Washington: U.S. Government Printing Office, 1960, 13 p.

Robert H. Bonthuis, et al. *The Independent Study Program in the United States*. New York: Columbia University Press, 1957.

Winslow R. Hatch and Ann Bennet, *Independent Study*, New Dimensions in Higher Education, No. 1, Washington: U.S. Government Printing Office, 1960.

¹² Ralph W. Tyler, "Conducting Classes to Optimize Learning," a paper published in *Achieve Learning Objectives* (a report of the Summer Institute on Effective Teaching for Young Engineering Teachers, Aug. 28-Sept. 9, 1960). University Park, Pa.: The Pennsylvania State University, 1960.

recognize the need for independent study and a better one to involve students significantly in such study.

The case for independent study or inquiry is summed up nicely in the following quotation :

A . . . condition that makes for better learning in higher education is definite provision for independent study. There is reason to believe that the assumption by the student of more responsibility for his education increases the likelihood that he will continue his education on his own after graduation. The notion that learning can take place only in formal courses has plagued American education. This is now being overcome and "spoon-feeding" is more and more being viewed as bad education. The textbook-lecture pattern of teaching usually leads to emphasis on acquiring information to the neglect of clarifying *ideas*. There is ample evidence that ideas, once thoroughly understood, become a permanent part of the student, whereas information unrelated to ideas in the mind of the student is mostly forgotten in a few months. Both information and ideas—and, it might be added, skills—are important in education. A wider use of independent study plans in which the student is expected to dig out knowledge for himself, probably from original sources, instead of relying on lectures or textbooks, would enhance the quality of higher education.¹³

An institution indicates its competence in independent study or inquiry to the extent that it practices what it preaches most—namely, provides active learning, discovery, or inquiry—and where the student makes substantial investment in acquiring. An important byproduct or consequence is that the teachers of such students do not need to waste their time purveying information but can reinforce, extend, and examine the information acquired by their students.

Standard 7

Quality may be indicated in colleges which, in conjunction with independent study or inquiry, offer common or core curriculums as bases for common understandings.

One of the reasons why independent study has not realized some of its potential "plus" values is that it has not had a solid curricular context. As a consequence, there is little reinforcement from course to course. In effect, the college does not throw its curricular weight behind the effort.

Besides providing for better communication between students and teachers, thereby developing a sense of intellectual community, a common curriculum can also advance a "common spirit of inquiry."¹⁴

¹³ Manning M. Pattillo, Jr., "A Foundation Looks at Higher Education," *Special Reports*, Circular No. 563, Office of Education, OE-50028, Washington: U.S. Government Printing Office, March 1959, p. 54.

¹⁴ *Monteith College, Wayne State University Bulletin*, 1960-61, p. 6.

"Common understandings" is the phrase used to describe these purposes on many other campuses. Such understandings are achieved by bringing together courses and teachers that have heretofore been kept apart in the student's mind.¹⁵ Where methodological concerns and value quests are mutual, where common principles, intellectual skills, and a scientific emphasis are the cement, the result is more likely to be consolidation, greater unification, and a common outlook.¹⁶

John E. Rodes, reporting on Occidental College's 11 years' experience with a prescribed and integrated History of Civilization program, observes: "It draws the freshman and sophomore classes together in a common learning situation which has greatly added to student morale."¹⁷

Another college observes that elective offerings were originally so scattered that students were insufficiently prepared for graduate study in either general or specialized knowledge.¹⁸ The counter provision is a curriculum required of all students for the first 3 years in which the students' general education and basic knowledge of their specialization (science, social sciences, and humanities) are intensified and cohesive.¹⁹

Regardless of the extent of common learning situations, it is generally agreed that programs in which inquiry is a stated or an implied purpose are likely to be successful to the degree faculties involved have a sophisticated understanding of the problems and a commitment to the program.

Standard 8

Quality may be indicated in colleges whose introductory courses or programs reject a discriminating scholarship and also exploit uniqueness, the point being to make them sufficiently above high school courses in method and content to challenge students.

It is positive motivation for students to explore something new.²⁰ However, Tyler tells us that only as each new practice requires the

¹⁵ *The Social Sciences in the Liberal Arts College*, a report of the study on General Education in the Social Sciences at Pomona College, Claremont, California, August 1957. (Unpublished.)

¹⁶ Report on the *Program for Utilization of College Teaching Resources*, conducted at Lehigh University, 1956-57. (Unpublished.)

¹⁷ "Integrated General Education Course in History of Civilization, Occidental College," *Special Reports*, Circular No. 563, Office of Education, OE-50028. Washington: U.S. Government Printing Office, March 1959, p. 29.

¹⁸ *The Ithaca Plan*, Ithaca College, 1960.

¹⁹ *Ibid.*

²⁰ Robert M. Gagné, "Principles of Learning," a paper published in *Achieve Learning Objectives* (a report of the Summer Institute on Effective Teaching for Young Engineering Teachers, Aug. 28-Sept. 9, 1960), University Park, Pa.: The Pennsylvania State University, 1960, p. B-54.

student "to give attention to it because of new elements in it does it serve adequately as a basis for effective learning."²¹ Newness thus becomes a criterion of good teaching and learning.

At Antioch College, it was discovered that the independent study program met with exceptional success when offered to freshmen. Expecting something different from what they had known in high school, the students not only accepted the independent study program but also made it one of the most successful programs of its kind.

Not all institutions provide for the fact that something substantial and challenging should be done for the aspirations of the student and the college. This is borne out by the results of a comprehensive study on the withdrawal of college students.²² Forty-eight percent of the men and 33 percent of the women respondents who had withdrawn noted as a reason for withdrawal a lack of interest in their studies.²³

Standard 9

*Quality may be indicated in colleges that have "high but attainable aspirations."*²⁴

For both student and college, high aspirations are necessary. This is a point emphasized by Gagné, Tyler, and McKeachie.

One way in which an institution may dramatize its aspirations for its students—aspirations that are high but attainable—is to exploit the *master-teacher* approach. In Hofstra's New College, this approach is being tested. The master-teacher is central in Washington University's (St. Louis) vision of the university, and has been an important consideration in the staffing of Wayne State University's Monteith College, Michigan State's Oakland University, and Delta College at Saginaw, Michigan.

Standard 10

Quality may be indicated in colleges that are able to demonstrate that they do, in fact, develop the critical faculties of their students.

This standard is derived from the research done on learning and on the characteristics of students and of institutions associated with

²¹ Ralph W. Tyler, op. cit., p. C-11.

²² Robert E. Iffert, *Retention and Withdrawal of College Students*, U.S. Office of Education, Bulletin No. 1, 1958. Washington: U.S. Government Printing Office, 1957. 177 p. Study was based on a sample consisting of approximately 13,000 unmarried nonveteran students who entered college in the fall of 1950.

²³ Ibid.

²⁴ Ralph W. Tyler, op. cit., p. C-11 and 12.

"high productivity." The criterion can be approached directly and without an elaborate defense because every college proposes to teach its students how to think. While many institutions make this claim, few can prove it. Fewer still have attempted to discover how *much* they improve student thinking. Since instruments are available that test this achievement, an institution that attaches importance to it can provide itself with this information. For a discussion of the techniques that may be used, one could profitably read *General Education—Explorations in Evaluation*²⁵ and "Teaching for the Development of Thinking Abilities and Habits."²⁶

Standard 11

Quality may be indicated in the college whose seniors tend to be more creative than they were as freshmen.

This standard is based on the research done on the characteristics of highly productive colleges and student bodies, and the substantial body of creativity literature.²⁷ That seniors are inclined to be more creative than freshmen cannot be assumed; certain studies indicate that some students become less creative and more conforming as a consequence of their college experience.

Of this problem, Cartier has this to say:

While we know little about the "disease" (creativity), we do know something about the "antidote." Our society possesses a great variety of antidotes for this marvelous "disease," and applies them in huge doses at the first symptom. They consist of various combinations of pressures toward conformity, fear of failure, fear of the unknown, fear of being scoffed at, disillusionments and delusions, the constant harping (in very subtle ways) on adjustment. This adjustment is too often adjustment to the world as it exists now—a very imperfect world. Adjustment to it and passive acceptance of it, therefore, constitute a denial of every individual's right and responsibility to see the wrongs in it and rebel against them.

We have often heard that the majority must rule. We teach our children this when they are too young to know the meaning of it. Each child lives in a very small and often closed society which is a tiny minority of mankind. The only majority *he* sees is inside that circumscribed group, which may well be wrong. In fact, the odds are almost overwhelming that it will be. But we teach him to adjust—blindly. I mean we teach

²⁵ Paul Dressell and Lewis Mayhew. *General Education—Explorations in Evaluation*. Washington, D.C.: American Council on Education, 1954.

²⁶ John W. Hollenbach, "Teaching for the Development of Thinking Abilities and Habits—A Faculty Self-study, Hope College," *Case Book, Education Beyond the High School*, Case No. 35, Office of Education, Washington: U.S. Department of Health, Education and Welfare, Vol. 1, June 1958.

²⁷ For a partial bibliography, see Mervin B. Freedman, *Impact of College*, New Dimensions in Higher Education, No. 4, Washington: U.S. Government Printing Office, 1960, p. 24-27.

him blindly, to adjust blindly—not to strike out, not to fight, not to differ, not to question—in short, not to think creatively. . . . there are a thousand varieties of ways to teach people *not* to think creatively, and . . . we use them constantly in every grade from kindergarten through the graduate schools with terrible effectiveness. We can learn to recognize these things we do to kill a student's creativity and stop doing *some* of them.²⁸

Standard 12

Quality may be indicated in a college that has a significant impact on its students.

Since a college can determine, within limits, what its impact is, it can no longer ignore this responsibility. Even at Vassar College, which has made extensive impact studies of its students, it has been demonstrated that, "except for a minority . . . the academic and intellectual aims [of the college] do not enter primarily into the formation of the central values and habits of life of the student body."²⁹ The Vassar study also indicates that the faculty has little impact on the thinking of students and that the student culture has a greater effect, but that its effect is generally a leveling one. Institutions in general might well ask themselves how much they know about their impact upon students and what they are doing about it.

Standard 13

Quality may be indicated in colleges that are deliberately permissive and flexible.

To be effective, permissiveness and flexibility should be deliberately purposeful in order to enhance student development. Actually, this standard concerns avoidance of enforced conformity or stereotypy. As to permissiveness, Lazarfeld is reported to have found it in the:

. . . teacher's willingness to permit unorthodox, unpopular ideas and ideologies to get a hearing on the campus. . . .

The most permissive professors are also those most politically liberal in a broader sense. They give most attention in their teaching to a progressive educational philosophy, one which stresses the value of imbuing students with a desire for social creativeness, by emphasizing problem areas and controversial issues rather than established facts and accepted knowledge. . . .

²⁸ Francis A. Cartier. Educational Division, Air Force ROTC, Maxwell Air Force Base, Alabama. A letter to the author, November 1960.

²⁹ Nevitt Sanford, "Impact of a Woman's College on Its Students," *Special Reports*, Circular No. 563, Office of Education, OE-50028. Washington: U.S. Government Printing Office, March 1959. p. 44.

The schools of highest quality are also those which have the most clearly formulated policy on matters of academic freedom; their faculties have a much more powerful voice in helping to set this policy, and their administrative officials are considered much more ready and able to come to the aid of a teacher under attack.³⁰

Pattillo's conclusion is that "informality in personal relationships, especially between teachers and students, is associated with academic achievement . . . [in] colleges and universities that have produced far more than their share of the educated leadership of the United States."³¹

Cole and Lewis cite numerous types of flexibility. For example, advanced placement, at least in the case of Harvard University, gives leisure to the student in his fourth year to do whatever he wishes—to attend courses, to take an additional senior tutorial, *to read on his own*, or to take graduate work.³² Also cited by Cole and Lewis are Harvard's course reduction to permit more independent study or inquiry; Reed College's senior thesis for those who pass a special qualifying exam in their junior year; tutorial plans such as those at the University of Michigan, the University of Chicago, and Harvard; special courses for special students at the California Institute of Technology, San Francisco State College, Hiram College, University of Michigan, Oberlin College, University of Chicago, Massachusetts Institute of Technology, and Stanford University; and four kinds of special or honors programs at Yale University: the "scholars of the house" plan, small seminars for honors candidates in their major fields of study, sophomore seminars in the residential colleges (which may be taken in lieu of a regular lecture class), and the directed studies program of general education (which is limited to the top quarter of the student body). All provide flexibility and an opportunity for independent study or inquiry. Special devices available for upperclassmen, such as Stanford's senior colloquia, Reed's senior symposium, and the University of Chicago's preceptorials in some third-year courses, are other ways in which the purposes of independent study or inquiry are met. For other aspects of flexibility, see *Advanced Standing*³³ and *The Credit System in Colleges and Universities*.³⁴

³⁰ Richard Herpers, "Academic Freedom During 'The Trying Years,'" *Special Reports*, Circular No. 563, Office of Education, OE-50028. Washington: U.S. Government Printing Office, March 1959, p. 57-58.

³¹ Pattillo, *op. cit.*, p. 54.

³² Charles C. Cole, Jr., and Lanora G. Lewis, *Flexibility in the Undergraduate Curriculum*, New Dimensions in Higher Education, No. 10, 1962, 57 p.

³³ Shirley A. Radcliffe, *Advanced Standing*, New Dimensions in Higher Education, No. 8, Washington: U.S. Government Printing Office, 1961, 24 p.

³⁴ Lanora G. Lewis, *The Credit System in Colleges and Universities*, New Dimensions in Higher Education, No. 9, Washington: U.S. Government Printing Office, 1961, 37 p.

Standard 14

Quality may be indicated in colleges that are experimental.³⁵

The experimental nature of colleges appears to be a good indicator of quality because only competent faculties are apparently disposed to experiment. They may be the only ones that dare to experiment.

While reports of such experimentation and achievements may be impressive, no institution or group of institutions and no agency or organization has grounds to be complacent about what it has done to improve the quality of undergraduate education. A review of experimentation in connection with a current study indicates:

- a. That quality and experimentation support each other—quality leads to experimentation, and experimentation may enhance quality.
- b. That the most experimental institutions are those that also place high in studies of the undergraduate origins of American scholars.
- c. That more experimentation is being done by institutions with established reputations than by those which have less to risk.
- d. That more experimentation is being done by private than by public institutions.

There is support also from the literature on learning. Gagné refers, for example, to the place of the experimental habit and competence in optimal learning situations.³⁶ While Pattillo uses a little different language, he, too, is impressed by the significance of experimentation. "The good institution constantly gathers evidence on the impact of its program on its students. Closely allied with this critical attitude is a willingness to experiment with promising new approaches. . . ."³⁷

Standard 15

Quality may be indicated in colleges that jealously defend the principles of academic freedom.

We have been told that ". . . the best schools, with their highly permissive faculties, were those most vulnerable to attack in the postwar decade."³⁸ One form of attack was to insist upon an oath of allegiance from teachers that was not required of other citizens. To many, this was considered an encroachment upon academic freedom. The colleges that typically challenge imposed loyalties are institutions whose faculties stand for no abridgment of their freedom and whose administrators are both willing and able to defend faculty rights to independence of thought and expression.

³⁵ For such colleges see: Winslow R. Hatch. *The Experimental College*, op. cit.

³⁶ Gagné, op. cit.

³⁷ Pattillo, op. cit., p. 54.

³⁸ Herpers, op. cit., p. 8.

Standard 16

Quality may be indicated in colleges where effective teaching is highly regarded and adequately compensated.

Where good teaching is insisted upon—and is not just given lip service—one gets good teaching. Where it is insisted upon, it should be recognized and adequately compensated. Whether one deals with institutions ranked high in the production of scientists and other scholars,³⁹ or with those recognized for some other indication of quality,⁴⁰ he discovers that teachers are honored for their teaching and that their scholarship is not viewed as an end but as a means to better teaching.

If an institution pays teachers well for their teaching, great dividends may be realized from the quality of instruction. Raw statistics on compensation *en masse* may be highly important in relation to the economic status of the professional,⁴¹ but averages derived from them may be highly misleading. In the compensation of teachers the problem is not so much that some institutions have the money and some do not. It is rather that some spend their money one way and others another.

Standard 17

Quality may be indicated in colleges whose graduates go into teaching in unusually large numbers.

This index is suggested because, where the teaching is good, students are more predisposed to enter teaching than where the teaching is mechanical and uninspired. For example, honors programs are reported to be particularly attractive to potential teachers. Behind the records made by some institutions in attracting students to teaching, there typically stand cadres of exceptionally able and committed teachers.⁴²

The most frequently given reason for not recognizing and rewarding good teaching is that it is difficult to identify. Difficult it is, but not impossible. That it is worth the effort is indicated by the obser-

³⁹ See Baccalaureate Origins references, section III.

⁴⁰ See references in section III, especially those on Characteristics of Institutions.

⁴¹ "The Economic Status of the Profession, 1959-60: Annual Report by Committee Z." *AAUP Bulletin*, Summer, 1960.

⁴² Frank Kille, *The Undergraduate Origins of College Teachers*. Carleton College and the State University of New York, 1958; and Allan O. Pfnister, *The Baccalaureate Origins of American College Teachers*. Washington: Association of American Colleges, 1961. See also Lanora G. Lewis, J. Neil Bryson, and Robert Poppendieck, *Talent and Tomorrow's Teachers—The Honors Approach*, Number 11 of the New Dimensions in Higher Education Series. Washington: U.S. Government Printing Office, 1963.

vation that, were this one thing done, we might be able to tone down the elaborate and expensive programs currently being discussed that are designed to improve the recruitment, placement, and inservice training of teachers. The basis for this opinion is that, if an institution recognizes and rewards good teaching, it gets good teaching and enough good teachers.

Standard 18

Quality may be indicated in colleges that place highest in a composite of the "origin" studies.

Wisdom is found in the composite of studies dealing with the undergraduate origins of American scholars, scientists, teachers, and graduate students and in the setting provided by the quality literature, much of which is discussed in this publication. Some of the better known titles in the literature on baccalaureate origins are listed in the next section.

Standard 19

Quality may be indicated in colleges where opportunities for study abroad are carefully planned and implemented.

Such programs ⁴³ are characterized by the following attributes:

- a. The study is planned for at least a year in advance, preferably in the freshman year and ideally at the student's initial registration. The planning should reflect at least in principle the pooled experience of American colleges.
- b. The students selected are required to *demonstrate* satisfactorily (by tests and prior performance) independence, critical facility, tolerance, sensitivity, responsibility, and a nonstereotyped approach to learning.
- c. The students selected are required to demonstrate (by tests, papers, or other critical or creative efforts) a level of ability which will permit them to perform creditably, particularly in those countries where they will be compared with highly selected university students.
- d. The purposes of the program are stated explicitly, and the performance of the student is evaluated in terms of its specific objectives.
- e. Credit, if given, is never in excess of that given by the strongest colleges and those with the longest experience in study abroad programs. The amount may sometimes be objectively determined by having the student successfully "challenge" courses or elements of courses offered for credit on the home campus or by other fully accredited institutions.

The above attributes would seem to apply also to study undertaken at a foreign university in courses for its nationals and in special programs designed for American students. The attributes would also

⁴³ See "Study Abroad" references in section III.

appear relevant to programs regardless of whether their purpose is specialized or general or whether it is simply immersion in a foreign culture.

Standard 20

Quality may be indicated in colleges whose "institutional" research is done on important things, and not merely on problems that are useful or interesting.

In making this observation one need make no distinction between those institutions with bureaus of institutional research or research committees, and those where the research is done in the departments in a quite uncoordinated fashion. Whether a lot of research is done or very little, it can be either significant or trivial. Some institutions, like some people, have a talent for doing important research, while others seem to lack the insight. Despite commendable industry and technical competency, they miss the primary targets. The role of institutional researchers, then, may well be not only to answer questions but also to ask them. The function of researchers—were sufficient attention attached to importance—might well be continually to bedevil the administration and faculty by asking some of the right questions. Certainly, researchers can remind and keep reminding colleagues that priorities must be established in planning, that the resources of the institution are limited, and that priorities must be reexamined constantly.

Standard 21

Quality may be indicated in colleges whose counseling program is so managed that the counselors have an impact on the total institution—and not upon just those students with whom they counsel.

To play this role, counselors have to be thoroughly cognizant of trends and developments in higher education. Not only must they be able to identify characteristics of students; they must also have a working knowledge of the characteristics of institutions and see the interrelationships between student characteristics and institutional characteristics. They must be familiar with research on learning theory and with methods involved in measuring not only academic achievement but college impact as well. Furthermore, the counselor's background in psychology and sociology should be such that he can work with the administration and faculty in analyzing the needs of students, planning effective programs to meet those needs, and evaluating results.

III. Literature of Quality

THE LITERATURE from which the 21 standards of quality were distilled falls logically into the following seven categories, each of which is discussed below:

1. "Acquiry"
2. "Inquiry"
3. Learning and Teaching Theory and Practices
4. Characteristics of Students
5. Characteristics of Institutions
6. Baccalaureate Origins
7. Study Abroad

"Acquiry"

By "acquiry" is meant that process of learning and teaching in which the primary emphasis is upon the acquisition of information rather than upon its examination. The two are, of course, usually mixed; but where the major achievement is acquisition, the process is described as "acquiry."¹ For the nature of the experimentation done and for the conclusions that may be drawn from it, examples are illustrative:

In research done on teaching effectiveness at the University of Michigan, it was discovered that in the simple acquisition of facts students did as well, if not better, without the personal intercession of teachers than they did with it; that teachers may actually distract students in this instance.² It was even discovered that students studying by correspondence mastered content at least as well as, and perhaps a little better than, resident students.

Pfnister reports in his "Review of Research on Class Size" that, when certain English classes were reduced from 5 to 3 hours a week, and when certain social science classes were treated in the same man-

¹ For a discussion of this subject see Winslow R. Hatch and Ann Bennet, *Independent Study*, New Dimensions in Higher Education, No. 1, Washington: U.S. Government Printing Office, 1960, p. 12-20.

² Thomas S. Parsons, Warren A. Ketcham, and Leslie R. Beach, "Effects of Varying Degrees of Student Interaction and Student-Teacher Contact in College Courses." Ann Arbor, Mich.: School of Education, University of Michigan, 1958, 56 p. (Processed).

ner, the average achievements of the students were at least as high under the new as under the old arrangement.³

After reviewing the research done, whether under the name of independent study, teaching effectiveness, or learning, Pfnister concluded that, if we are willing to agree that the proper criterion of student achievement is command of a certain content, contact hours between student and instructor may be slashed drastically without any apparently bad effect upon the amount of learning.⁴

Pfnister also reports that in another experiment seven 10-minute conferences during a semester resulted in better student achievement than did regular group class sessions.⁵

In general, the results of research on independent study programs indicate that students in these programs learn at least as much as those engaged in regular class work.⁶ The implications in this research are that neither teachers nor the colleges that employ them can afford to "instruct," that is, to simply provide information. They must "teach." They must do more than instruct. They must examine the information taught or acquired. They must make their teaching and their students' learning a form of inquiry. From this, we can only conclude that the more one teaches and the less one instructs, the better it is likely to be for both the teacher and the taught. It is better for the teacher because, if he instructs, he is vulnerable and expendable. Books, teaching machines, teaching tapes, and television sets, all of which can be mass-produced, can be used to instruct.

In de-emphasizing the role of "informing" in teaching, Gagné maintains that what the teacher can do best is to know enough not to try to inform.⁷

"Inquiry"

By inquiry is meant that process of learning and of teaching in which information is examined. It is that which is done after information has been provided or learned; it is the reason for acquiring. Inquiry is the essence of honors, of independent study—properly understood and practiced—and of problem-oriented instruction.

³ Allan O. Pfnister, "Review of Research on Class Size." An address given at the Annual Conference on Higher Education in Michigan, University of Michigan, November 17-18, 1959.

⁴ Ibid.

⁵ Ibid.

⁶ Winslow R. Hatch and Ann Bennet, *Independent Study*, op. cit.

⁷ Robert M. Gagné, "Principles of Learning," a paper published in *Achieve Learning Objectives* (a report of the Summer Institute on Effective Teaching for Young Engineering Teachers, August 28-September 9, 1960). University Park, Pa.: The Pennsylvania State University, 1960.

Reports on this subject appear in the following literature:

Baskin, Samuel. *Quest for Quality, New Dimensions in Higher Education*, No. 7. Washington: U.S. Government Printing Office, 1961. 18 p.

Fund for the Advancement of Education. *Better Utilization of College Teaching Resources*. New York: Fund for the Advancement of Education, May 1959. 63 p.

Hatch, Winslow R., and Ann Bennett. *Independent Study, New Dimensions in Higher Education*, No. 1. Washington: U.S. Government Printing Office, 1960. 36 p.

The conclusions drawn from these reports are as follows: A distinction should be made between "instructing" and "teaching." The necessity of making this distinction is the demonstration that in the act of acquiring information the actual presence of a teacher is not necessary and may not be desirable; that individual students can "instruct" themselves (independent study) and apparently do this quite effectively. If "informers" or "instructors" have to be drafted to manage acquiry, such as a librarian or a technician in a learning resources center, they can be drawn from the ranks of those who are most adept at purveying information. Teachers may need to assemble and prepare such materials as books, films, and tapes, they may occasionally make televised and other presentations, transcribe their lectures, and "program" some of their materials. But they should not curtail—or be permitted to curtail—the amount of time they have for "teaching." They should free themselves to teach.

Learning and Teaching Theory and Practices

In the literature on learning theory and the conditions of learning, the problem is to get at the essence of what is appearing in a voluminous literature and to find a consensus as to what this essence is. Such a consensus is not easily achieved, but there is impressive agreement based on papers presented by Gagné, Tyler, and McKeachie at the Summer Institute on Effective Teaching for Young Engineering Teachers.⁸ These papers were prepared independently, under quite different titles, but they present essentially the same points. They are recommended for their conciseness and the creditability of the witnesses involved. Of the observations made by these authors, those relevant to this publication are:

1. That learning is good and hence becomes a criterion of quality when it is "active" rather than "passive" (McKeachie); when it reflects that which "the learner learns," that which "he is thinking, feeling, or doing" (Tyler);

⁸ *Achieve Learning Objectives*, a report of the Summer Institute on Effective Teaching for Young Engineering Teachers, Aug. 28–Sept. 9, 1960. University Park, Pa.: The Pennsylvania State University, 1960.

when "the central part of education as a system [is] . . . the *human learner*" (Gagné).

2. That it is positive motivation for students to explore something *new* (Gagné). Only as each *new* practice requires the student "to give attention to it because of *new* elements in it does it serve adequately as a basis for effective learning" (Tyler). In sum, newness may be a criterion of good teaching and learning.
3. That "levels of aspiration [are] . . . important" (Gagné). The "learner [must] set high standards of performance for himself . . . high but attainable" (Tyler). "We can teach students to enjoy learning" (McKeachie).
4. That the endorsement of "guided discovery" (Gagné), of "problem solving" (Tyler), and of "problem-oriented approaches" (McKeachie), provides another criterion of quality. The word used to describe this type of learning in honors programs, in independent study, and in the newer experimental colleges, is *inquiry*; and this is the term used in this publication to describe the several manifestations of this phenomenon.

Treatments of learning and teaching practices have been scattered throughout the New Dimensions series and will be treated in more detail in forthcoming issues.

Characteristics of Students

While the research on this subject has been very considerable during the last 4 or 5 years, two centers have distinguished themselves: the Center for the Study of Higher Education at the University of California at Berkeley and the Mary Conover Mellon Foundation's program at Vassar College. Listed below are reports from these centers.

CENTER FOR THE STUDY OF HIGHER EDUCATION

CLARK, BURTON R., "College Image and Student Selection," *Selection and Educational Differentiation*. Berkeley, Calif.: Center for the Study of Higher Education, 1960, p. 155-168.

——— "The Influence of Organization Image on Student Selection," Berkeley, Calif.: Center for the Study of Higher Education (Processed).

——— and TROW, MARTIN, "Determinants of College Student Subculture," to be published as chapter 2 in *The Study of Peer Groups: Potential, Procedures and Proposals*, T. Newcomb and E. K. Wilson, eds. Forthcoming book for the Social Science Research Council.

HEIST, PAUL, "The Diversified Student Population of American Higher Education," paper presented at the Annual Meeting of the American Psychological Association, Washington, D.C., September 1958.

———, "Diversity in College Student Characteristics," *Journal of Educational Sociology*, Vol. 33, No. 6, February 1960, p. 279-291.

———, "Variations in the Personality Characteristics of Underachieving College Students," paper presented at the Symposium on the Underachieving College Student at the American College Personnel Association meeting, Spring 1960.

- HEIST, PAUL A., MCCONNELL, T. R.; MATSLER, FRANK; and WILLIAMS, PHOEBE, "Personality and Scholarship—Distinguished Characteristics of High Ability Students Who Choose Institutions Ranked High in the Production of Future Scholars," *Science*, Vol. 133, No. 3450, February 10, 1961, p. 362-367. (Summarizes research at the Center for the Study of Higher Education.)
- and WEBSTER, HAROLD, "Differential Characteristics of Student Bodies with Implications for Selection and Study of Undergraduates," *Selection and Educational Differentiation*. Berkeley, Calif.: Center for the Study of Higher Education, 1960, p. 91-106.
- MCCONNELL, THOMAS R. "Differential Selectivity of American Higher Education," *The Coming Crisis in the Selection of Students for College Entrance*, Kenneth E. Anderson, ed. Washington, D.C.: American Educational Research Association, National Education Association, 1960, p. 8-9.
- . "Problems of Distributing Students Among Institutions with Varying Characteristics," *North Central Association Quarterly*, Vol. 35, January 1961, p. 226-238.
- and HEIST, PAUL A. "The Diverse College Student Population," *The American College*, Nevitt Sanford, ed. New York: John Wiley & Sons, Inc., 1962, p. 225-252.
- and ———. "Do Students Make the College?" *College and University*, Vol. 34, Summer 1959, p. 442-452.
- WARREN, JONATHAN, and HEIST, PAUL A. "Personality Attributes of Gifted College Students," *Science*, Vol. 132, August 5, 1960, p. 330-337.
- WEBSTER, HAROLD "The Impact of the Student on the College," *Institutional Research on College Students*, K. Wilson, ed. Atlanta, Ga.: Southern Regional Education Board, 1962.
- . *Personality Changes in College Students*. Berkeley, Calif.: Center for the Study of Higher Education (Processed).
- and BENJAMIN BLOOM. "The Outcomes of College," *Review of Educational Research*, Vol. 30, October 1960, p. 321-333.

A summary of research at the Center indicates that able students at "high productivity" colleges have the following: disposition to work independently and to like it, an intellectual orientation, a liberal outlook, an experimental nonstereotyped cast of mind, sensitivity, flexibility, tolerance, a creative-artistic flair, and resistance to leveling influences and to conformity for conformity's sake.

These studies also indicate, among other things, that students with the above characteristics tend to increase the effectiveness of a college and that faculties, hence colleges, with the same characteristics make the best use of student talent.

VASSAR-MELLON STUDY

- BEREITER, CARL, and FREEDMAN, MERVIN B., "Personality Differences Among College Curricular Groups," *American Psychologist*, Vol. 15, 1960, p. 435.
- FREEDMAN, MERVIN B., *Impact of College*, New Dimensions in Higher Education, No. 4, Washington: U.S. Government Printing Office, 1960, 27 p.

- . "The Passage Through College," *Journal of Social Issues*, Vol. 12, 1956, p. 13-24.
- . "Some Observations on Personality Development in College Women" *Student Medicine*, Vol. 8, February 1960, p. 224-245.
- . "What Does Research Show About the Effects of the Total Institutional Program on Student Values?" *Current Issues in Higher Education*. G. Kerry Smith, ed. Washington: National Education Association, 1958, p. 102-107.
- SANFORD, NEVITT, ed. *The American College: A Psychological and Social Interpretation of the Higher Learning*. New York: John Wiley & Sons, Inc., 1962, 1,084 p. (Summarizes Vassar-Mellon Study literature.)
- , ed. "Personality Development During the College Years," *Journal of Social Issues*, Vol. 12, 1956, p. 3-72.
- , "Personality Development During the College Years," *Personnel and Guidance Journal*, Vol. 35, 1956, p. 74-80.
- WEBSTER, HAROLD, "Changes in Attitudes During College," *Journal of Educational Psychology*, Vol. 49, June 1958, p. 100-117.

In a study of the values of American college students, Suchman⁹ found that most of the students included in the study believed that, on the whole, colleges are doing a good job. In evaluating their education, students stressed two areas of dissatisfaction: (1) the casual development of moral capacities and values, and (2) impersonal student-teacher relationships. In this study, which included Cornell University students and a broad sample of students in 10 other major universities, it was discovered that moral capacities and values lie in a cluster of conservatism involving conformity to the social role expectations of one's group, intolerance of deviation, and conservative opinions on political and social issues. The report concludes that, with regard to student-teacher relationships and values, what is lacking are dominant new educational values characteristic of these new times.

Characteristics of Institutions

A focus for this study has been the Syracuse "approach." The list of references on this topic provided below is illustrative only and therefore not necessarily complete.

- PAGE, C. ROBERT. "Five College Environments," *College Board Review*, Vol. 41, Spring 1960, p. 24-28.
- and STERN, GEORGE G. "An Approach to the Measurement of Psychological Characteristics of College Environments," *Journal of Educational Psychology*, Vol. 49, October 1958, p. 269-277.

⁹ Edward A. Suchman. "The Values of American College Students," *Long-Range Planning for Education—Report of 22nd Educational Conference Sponsored by the Educational Records Bureau and the American Council on Education*, A. E. Traxler, ed. Washington: American Council on Education, 1958, p. 110-120.

- PAGE, C. ROBERT, and STERN, GEORGE G. *A Criterion Study of College Environment*. Syracuse, N.Y.: Psychological Research Center, 1958. 101 p.
- STERN, GEORGE G. *Characteristics of the Intellectual Climate in College Environments*. Syracuse, N.Y.: Syracuse University, 1962. (Processed.)
- . "Congruence and Dissonance in the Ecology of College Students," *Student Medicine*, Vol. 8, 1960, p. 304-339.
- . *The Ecology of the American College Student: Varieties of Constraint in American Education*. Syracuse, N.Y.: Syracuse University, 1959 (Processed).

The following statements, drawn from the experiences of the Lilly Endowment, Inc., reflect some of the same conclusions found in the above literature:

What, then, are the characteristics associated with quality in a college or university, regardless of its size or location or particular clientele? . . .

The most obvious attribute of a good institution is its *seriousness of purpose*. The students are there to get an education; the faculty is determined that the students shall succeed in this. The main business is education, and the amenities of campus life are not permitted to interfere. . . .

Secondly, we observe that the better institutions are *self-conscious about their distinctive roles* within the total enterprise of higher education. . . . A quality institution is not afraid to be different when to be different means to be better.

The third ingredient of a first-class college or university, as we see it, is the *care with which it selects and retains faculty members*. . . . The responsible undergraduate college . . . will refuse to recognize the overriding importance of any one of the main qualifications for an educational post—sound scholarship, teaching ability, and personal integrity. It will insist on all three.

. . . [another] characteristic of a quality institution is its *perpetual dissatisfaction with itself*. . . . It uses the best techniques that have been developed for appraising educational results—techniques far superior to the earlier methods of testing. The good institution constantly gathers evidence on the impact of its program on its students. Closely allied with this critical attitude is a willingness to experiment with promising new approaches. . . .

. . . It appears that informality in personal relationships, especially between teachers and students, is associated with academic achievement. . . .¹⁰

Baccalaureate Origins

Studies of undergraduate origins of college faculties, scientists, and others who have achieved recognition as scholars shed some light on the qualities in the colleges which might contribute to high attainment by their students. Included in the baccalaureate origins literature are the following:

¹⁰ "A Foundation Looks at Higher Education." *Lilly Endowment*, —A Report for 1957. Indianapolis, Ind.: Lilly Endowment, Inc., p. 4-10.

- ASTIN, ALEXANDER W., "A New Approach to Evaluating College 'Productivity,'" *Science*, Vol. 136, No. 3511, April 13, 1962, p. 129-135.
- HOLLAND, JOHN L., "Undergraduate Origins of American Scientists." *Science*, Vol. 128, September 6, 1957, p. 433-437.
- KILLE, FRANK R., *A Study of the Baccalaureate Origins of College Faculties*. Washington: Association of American Colleges, 1959, 27 p.
- KNAPP, ROBERT H., and GOODRICH, HUBERT B., *Origins of the American Scientist*. Chicago: University of Chicago Press, 1952, 450 p.
- KNAPP, ROBERT H., and GREENBAUM, JOSEPH J., *The Younger American Scholar: His Collegiate Origins*. Chicago: University of Chicago Press, 1953, 122 p.
- PFNISTER, ALLAN O., *A Report on the Baccalaureate Origins of College Faculties*. Washington: Association of American Colleges, 1961, 93 p.
- THISTLETHWAITE, DONALD L., *Social Characteristics of Universities and Colleges in Relation to Their Intellectual Output*. Evanston, Ill.: National Merit Scholarship Corporation, 1959, 14 p. (Processed.)
- TRYTTEN, M. H., and HARMON, L. R., *Doctorate Production in United States Universities, 1936-1956, with Baccalaureate Origins of Doctorates in Sciences, Arts, and Humanities*. Washington: National Academy of Sciences—National Research Council, Publication 582, 1958, 155 p.

Study Abroad

A useful but partial bibliography is indicated below:

ABRAMS, IRWIN, and HATCH, W. R., *Study Abroad*, New Dimensions in Higher Education, No. 6, Washington: U.S. Government Printing Office, 1960, 21 p.

COUNCIL ON STUDENT TRAVEL, 179 Broadway, New York:

Inter-American Exchange . . . A Search for Understanding, report of Inter-American Seminar on Educational Travel Programs, 1962, 16 p.

Reports of the National Workshop on Overseas Programs for Students, 1962 (Processed): (1) "An Assessment of the Potentialities of Programs in Africa for U.S. Students," (2) "Emerging Patterns in Inter-American Exchange Programs," (3) "Next Steps in Youth Exchange with the U.S.S.R.," (4) "Evaluating the Expanding Field of International Exchange for High School Students," (5) "Developing More Effective Programs for Students Visiting the United States," and (6) "Evaluating Overseas Programs for Students."

Reports of Meeting of American Academic Program Directors in Germany and in France, 1961 (Processed).

INSTITUTE OF INTERNATIONAL EDUCATION, 800 Second Ave., New York 17, N.Y.:

Academic Programs Abroad: An Exploration of Their Assets and Liabilities, Report of a Special Conference at Mount Holyoke College, 1960, 30 p.

Programs for U.S. Undergraduates in Other Countries: A Survey of Present and Proposed Programs, 1960, 32 p.

Transplanted Students: A Report of the National Conference on Undergraduate Study Abroad, 1961, 19 p.

IV. Summary

TWENTY-ONE STANDARDS have been proposed to help answer the question, "What is quality in a college?" Quality may be indicated in those colleges—

1. That do the least "telling" and the most "teaching."
2. That make adequate provision for learning resources centers or their equivalent.
3. That provide the least remedial instruction.
4. Whose students do much general reading.
5. Whose students spend on the average more than 30 hours per week in out-of-class study.
6. That demonstrate competence in independent study, in "inquiry."
7. That, in conjunction with independent study, offer common or core curriculums.
8. Whose introductory courses clearly are above those offered in high school as to both content and method.
9. Whose aspirations are high—but attainable.
10. That can demonstrate gains in critical thinking.
11. Whose students are more creative as seniors than they were as freshmen.
12. That have a significant educational impact on students.
13. That are purposefully permissive and flexible.
14. That are deliberately experimental.
15. That jealously defend the principles of academic freedom.
16. Where effective teaching is highly regarded and adequately compensated.
17. Whose graduates go into teaching in unusually large numbers.
18. That place highest in a composite of studies showing baccalaureate origins of American scholars.
19. Where programs of study abroad are carefully planned and implemented.
20. Whose institutional research is done on important things.
21. Whose counseling program helps both the students and the institution as well.

These criteria, in turn, may become an index of student quality to the degree that students are responsive to them.

NEW DIMENSIONS
In Higher Education

Number 13

APPROACH TO INDEPENDENT STUDY

Compiled by
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Clearinghouse of Studies on Higher Education

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

JOHN W. GARDNER, Secretary
Office of Education • FRANCIS KEPPEL, Commissioner



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FOREWORD

The materials presented in this issue of *New Dimensions in Higher Education* deal with studies selected for their contribution to significant developments in higher education. Since *independent study* is such a development, but one which is not always examined critically or in an adequate context, the authors of the reports in this volume were asked to prepare summaries of their studies or experiments dealing with some aspect of *independent study* in the hope that such a compilation would provide the reader with a better understanding of the problems met in such study.

The findings presented here suggest that unless students and faculties are more critical about the nature of the inquiries made in *independent study*, their accomplishments are likely to be modest, even disappointing. They indicate further that this learning experience should involve a total climate of learning.

Since most institutions are convinced of the need and desirability of providing better opportunities for *independent study*, these reports should prove helpful.

Harold A. Haswell
Director, Educational Research
Information Center

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THE FUTURE OF SELF-DIRECTED STUDY

Howard E. Gruber*

IN THE HISTORY of science, negative experimental results have sometimes had a profound influence on subsequent thought. Galileo found that the weight of a body had no effect on its earthward velocity; Weissman found that chopping off the tails of rats had no effect on tail-length in subsequent generations. Although these investigators reported "no significant differences," their findings changed the course of science because the then prevalent theories predicted a difference. Unhappily, this particular bond between experiment and theory is not to be found in contemporary investigations of self-directed study.

This report discusses research on self-directed study, with special emphasis on two major findings. First, when the criterion for evaluating self-directed study is the student's learning of subject matter, the results are indeterminate, producing no very powerful argument for or against self-directed study and no argument for or against conventional methods such as lecture courses meeting two or three times per week. Second, when the criterion for evaluation of self-directed study is a group of attitudinal changes such as increased curiosity, critical thinking, and attitude toward independent intellectual work, brief experiences with self-directed study do typically produce small, favorable changes. From these results it may be argued that a systematic educational program can be worked out, viewing the 4-year college experience as a unified opportunity for growth toward intellectual self-reliance. A sequence of attitudinal and cognitive changes is proposed, and some attention is given to the changed role of the college teacher in such a program.

Broadly speaking, research on self-directed study is concerned with all methods of higher education designed to increase the student's responsibility for his own education. But among such methods, this report is not primarily concerned with *independent study*, a term usually reserved for those teaching methods involving individual projects in which student and teacher are in a one-

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one relationship. As described by Bonthius and others (1957), independent study is very rewarding, but it makes prohibitive demands on faculty time.† We are concerned, rather, with those ways of increasing the student's responsibility for his own education which preserve the essence of the course system, the one-many relation between teacher and students. For want of a better term, we refer to such methods as *self-directed study*. Although these methods vary, investigations of self-directed study have one essential point in common: while preserving the course system, the proportion of time devoted to formal classroom meetings is reduced.

Research workers in the field and in the laboratory recognize that educational experiments in self-directed study fail to yield dramatic or even consistent results. In the face of negative results, (i.e. "no harm done"), many educators cling to their belief in the efficacy of lectures or other formal classroom meetings; likewise, many psychologists optimistically cling to the hope that a convincing demonstration of the efficacy of self-directed study is "just around the corner."

During a protracted investigation of student-centered teaching methods which included self-directed study, McKeachie (1960) was forced to conclude that such methods are "no panacea" for the problems of higher education. Further, his important review of research on instructional methods stresses the predominant theme of "no significant differences" between educational methods (1962).

Similarly, after a 3-year investigation of self-directed study in many different university courses, Gruber and Weitman were forced to the rather weak conclusion that as far as learning of conventional course content is concerned, "a reduction in attendance at formal classes to one-third the usual number resulted in either small losses or small gains, the gains being somewhat more common than the losses" (1963).

However, these failures to find striking superiority of self-directed study should not be interpreted as representing empirical support for the unfounded American decision to subject college students to some 2,000 lectures in four years. If anything, field studies conducted at Antioch College, the Universities of Colorado and Michigan, and elsewhere around the country, do justify reduction in the number of formal class meetings. Such reduction produces little or no loss in subject matter learned, and almost certainly does produce some improvement in attitude toward in-

† See references at the end of this chapter.

dependent intellectual work, as well as in curiosity and critical thinking.

The major findings emerging from such field studies may be summarized as follows: a small change in the fabric of a student's life produces only a small change in his intellectual development. However, it should be stressed that all of these field studies have been extremely restricted, even timid, in character. On the surface, reducing the number of lectures attended in a course from three per week to one per week may seem a drastic change. [We even eliminated all lectures in one experimental group with rather favorable results.] Actually, when the experiment is restricted to a single course in a single semester, the change can be described as a temporary reduction from 15 to 13 lectures per week—not at all a fundamental change in the student's intellectual way of life.

These field studies are limited in two other ways. First, the student's work is typically still fragmented into five or six courses per semester. Second, having had years of training in certain teacher-directed patterns of education, the student is perfectly capable of privately preserving these patterns, at least in large part, unless far more drastic changes in his situation are introduced, or, alternatively, unless training methods are developed to deliberately break up these patterns. Given a textbook, a course outline, and an impending final examination, there is nothing to prevent the student from recreating and maintaining the passive, cramped, teacher-directed study pattern to which he has long been accustomed. Indeed, since he has four or five nonexperimental courses to cope with at the same time, the student in the experimental group often sees his only salvation in resisting whatever temptation to strike out on his own the self-directed study course may offer him. Much of our interview material suggests that this is actually the case (Gruber and Weitman, 1962), and Campbell's more restricted laboratory experiments (1963) suggest a similar conclusion. For if the American college student has learned little else, he has learned the strategy of passive acquiescence in uncritically assimilating the material the teacher thinks is important. This is a strategy that *works*: it has gotten him where he is, and it has gotten his older brother a little further on the road to the sort of success they are both striving for.

Taking note of the slightly positive but relatively unimpressive results of field investigations of self-directed study, Campbell (1963) attempted to maximize the effect in a more carefully controlled study, resembling a laboratory experiment. Emphasis was placed on equating the materials used by different groups, using each student in both self-directed and teacher-directed methods,

and conducting both methods of instruction under individualized learning conditions to avoid the confounding of certain variables. In spite of all these precautions, Campbell arrived at a conclusion strikingly similar to the closing paragraphs of most field studies:

Finally, it is worth noting that in no experiment did self-direction have an adverse effect on learning. This is economically quite important, for if there is nothing to be lost in learning efficiency, self-direction could save a good deal of time and money. . . . Learning efficiency too might show greater gains over a period of years than we have demonstrated in our brief experiments, at least for students who are motivated to learn . . . the cumulative effect on his problem-solving, decision-making, and creativeness might be impressive. (Campbell, 1963, p. 16.)

Although the author has no quarrel with these remarks, which he might almost have written himself, he finds it thought-provoking to notice that yet another investigation of self-directed study has ended in slightly favorable results which are suggestive but not convincing. Before educational policy-makers are willing to support radical innovations, they rightly require evidence that the proposed changes are genuinely worth the trouble that all changes cause—not merely assurances that the changes do no harm or unsubstantiated hopes that if continued long enough they *might* do considerable good.

Most research on educational method has been restricted to the piecemeal comparison of methods in a single, one-semester course, or in a fragment of such a course. Where the criterion variable has been assimilation of subject matter, a wide variety of methods has proved roughly interchangeable—methods as disparate as many lectures, a few lectures, instructor-led discussion, instructor-less discussion, individual study with little or no guidance as to sequence or timing of material, and tightly programed instruction. Slightly “positive” results (i.e., favoring one method) in one study are balanced by slightly “positive” results (favoring another method) in another study. In short, success in meeting the criterion of coverage of course content provides no firm basis for choice among teaching methods.

Perhaps the reason for this negative result is really very simple, and all we need to do is to abandon our cherished belief that different educational methods have different effects. But it is also reasonable to consider the possibility that these experiments have left the essential features of higher education intact, for in almost all these studies the following variables have not been touched: (1) the student's academic work is divided into five or six courses per semester; (2) the teacher plans the course without consulting

the student; (3) the student is given no new orientation in the educational aim of becoming educationally independent; (4) the student is given no specific instruction in active modes of thought which might transform his behavior while he is studying; (5) the immediate aim on which all students are necessarily focused is successful performance on a final examination and a satisfactory grade in the course; and (6) the person evaluating the student's performance is the teacher. Operating within situations that are alike in these essentials, the student studies in approximately the same way, whether the material is presented in the form of a lecture, conventional textbook, list of readings, or programmed textbook—he decides what the teachers want him to know and he tries to learn it with a minimum of distraction. Conclusion: “promising results in the expected direction, but no significant difference.”

When we turn to effects of self-directed study other than the learning of course material, the so-called “collateral learning” of critical and independent intellectual attitudes, the results are somewhat more hopeful. Again, the changes may be small, not actually transforming the student's way of thought, but they do seem to be consistently in a favorable direction. Perhaps the most uniform finding of research in this area is that students initially *dislike* greater responsibility but come to accept it in the course of a semester, and that their brief experience with self-directed study does produce a more favorable attitude toward independent intellectual work. This result is stressed by Gruber and Weitmen (1962), and similar findings are summarized by McKeachie (1962). Of course, there is little reason to believe that a single brief experience with self-directed study in an educational atmosphere fundamentally hostile to intellectual independence (cf. Gruber and Weitman, 1962) will produce attitudinal changes of great longevity. A fuller discussion of the relation of various educational methods to the student's “image of man” and to his image of himself has been presented elsewhere (Gruber, 1963).

These two major findings can be summarized as follows: Exposure to a single self-directed study course produces little or no effect on the learning of course content, but it does fairly consistently produce a small improvement in attitudes toward independent intellectual work.

Let us now consider a hypothesis stemming from the *joint* implication of these findings. Attitudinal changes develop rather slowly; moreover, they are a necessary *prerequisite* to stable changes in intellectual work habits. Otherwise the student will relapse into the pattern of passive acquiescence whenever pressures

mount, or whenever such patterns produce workable solutions. Furthermore, the student may need specific training to develop new patterns of active intellectual work.

What would a thoroughgoing program look like, self-contained within the college years, but stressing the protracted nature of development toward self-reliance?

The first phase in such a program would be to develop techniques for reorienting the student as soon as he arrives at college, so that he abandons any expectation that he can succeed in academic work merely by frenzied efforts to assimilate everything he is expected to know. We may not know how to do this in a way that would really reach the incoming student, but the results mentioned above suggest that we might learn to produce favorable changes in these attitudes in one or two semesters.

The second phase, overlapping the first, and lasting about a year, would be a deliberate attempt to inculcate new patterns of intellectual work. One useful guide can be found in Torrance's and Harmon's work (1961), in which they experimentally induced assimilative, critical, and creative learning sets in different groups of students. Campbell's recent study (1963) also provides some interesting suggestions on specific means of giving students brief practice in effective methods of self-directed study. The design of Campbell's study provides clearcut evidence for the hypothesis that changes in attitudes and work habits must precede self-directed study if the latter is to produce improved learning of substantive material. Campbell's findings led him to conclude that "the first obstacle to be removed in making self-direction successful is the students' strong habit of passive acquiescence."

Recently, my students and I have encountered a striking instance of highly educated individuals' spontaneous tendency to utilize passive learning methods in circumstances where very simple instructions can eliminate this tendency and thereby produce dramatic improvement of performance in a simple memory task. We have been elaborating the work of Wallace, Turner, and Perkins (1957) on paired-associate learning with brief instruction in the use of an active, highly flexible mnemonic procedure. In one such study, mature college graduates, all with responsible positions in educational systems, were exposed to paired-associates for 8 seconds per pair. In the control group, given no special instructions, no subject spontaneously employed a successful mnemonic procedure: all behaved in a relatively passive, rote fashion. In the experimental group, given only a few minutes of special instruction, performance was better than twice as good. The point at issue is not only the value of active cognitive processes but the

success of years of education in *suppressing* active intellectual work on the part of the learner.

Self-directed study must mean more than a simple alteration in the formal structure of higher education, such as can be accomplished by reducing the number of formal contact hours or the number of courses. If the student is not led to internalize new patterns of active thought, changes in the macro-structure of education may leave the all-important micro-structure intact. Research on students' thought-processes in the classroom, however, suggest that the obvious formal changes do facilitate new and more active ways of thinking (Bloom, 1953; Gruber and Weitman, 1962). The next step remains to be taken: to develop methods of evoking more active thinking *outside* the classroom.

The third phase of such a program would be to change the actual conduct of higher education in order to provide the student with convincing evidence that intellectual habits of passive acquiescence are bound to fail. The systematic introduction of instructional techniques placing greater and greater responsibility on the student, in such a way that intellectual self-reliance becomes a *powerful tradition*, is the most powerful force at our disposal.

But to accomplish this aim it is necessary to persuade the faculty that their students can benefit from such approaches. A prevailing faculty mythology insists, in effect, that students at the bottom of any given segment of the educational ladder are less self-reliant than students at the top. Thus, high-school seniors are often given notably more mature and independent forms of intellectual work than college freshmen, and the same pattern repeats itself in the transition from the senior year in college to the first year in graduate school.

Another similar feature of the prevailing mythology is the widespread faculty belief that only intellectually superior students can profit from self-directed study. Recent research lends little support to this hypothesis (Gruber and Weitman, 1962; McKeachie, 1962).

In one sense, persuading the college faculty of the value of self-directed study should not be too difficult. Frequently, a single experience in an experimental course has a marked positive effect on the professor's views (Gruber and Weitman, 1962). With a group of high school teachers as subjects, Gruber (1961) has also demonstrated that a brief training seminar can produce measurable shifts away from dogmatic teaching and toward problem-oriented teaching.

But in another sense, changing the prevailing style of instruction can be expected to be extremely difficult for a number

of reasons. First, the will to effect such changes deliberately is tempered by a due regard for democratic process and a justified hesitance to interfere with the work of other individuals. Second, the legitimate desire to prepare college students for graduate school inhibits change. The educational researcher may assure his colleagues that moves toward self-directed study will do no harm, but the responsible professor wants stronger assurance than that before he initiates fundamental changes. Third, the prevailing course system makes it difficult for the professor to give the student an opportunity for self-directed study while at the same time preserving the professor's opportunity to speak his own piece, to make his own ideas felt in the student's development. A change from the pattern of five three-credit courses per semester to three five-credit courses (or even four four-credit courses) would provide a much greater measure of flexibility in combining the professor's desire to "profess" with the student's need to develop independently.

Regardless of the specific methods adopted, it is clear that no important change in the conduct of higher education can be accomplished without wide and deep faculty support. The faculty must be convinced of the feasibility and desirability of a coherent program for developing their students' intellectual self-reliance. They must also be given an opportunity to discuss and indeed to refashion their own role in the educative process. If, for example, the student were attending three formal class meetings per week, each lasting 2 hours, instead of 15 one-hour classes, the teacher's role would be profoundly changed. The nature of this change has yet to be spelled out.

A program such as the one outlined above has two further difficulties that merit discussion. First, there is little firm evidence that it would actually produce clearcut effects. If experiences at institutions such as Goddard College were more widely known, many educators would probably be convinced as to the feasibility (i.e., "no harm done") of many innovations. But this kind of feasibility argument falls far short of the positive demonstration necessary to convince educational policy-makers to inaugurate controversial changes. Such positive demonstrations can only be provided by a new kind of multi-institutional research program combining the precision of experimental control with the scope of field investigations. Although a full discussion of this approach is not presented here, I believe that such an approach is feasible and desirable, and that it would produce new insights into the process of higher education.

A second difficulty in any full-scale program for developing in-

tellectual self-reliance stems from the long-range developmental character of this aspect of personal growth. Failure to examine these developmental implications might lead us to a peculiar impasse in which we manage to invent a program for maximizing intellectual independence and then discover that, after all, this is a highly objectionable state of affairs.

It is plain to see that maximal independence is only an *intermediate* goal. If the student were to remain in such a solipsistic state indefinitely, we might begin to complain that he was an asocial recluse. We do not want to substitute the hermit's cave for the anthill. Our aim is not independence for its own sake. For this reason, in improving our methods of developing intellectual self-reliance, we must give deeper thought to the kind of human relationships our educational methods foster. Increasing self-reliance need not produce increasing alienation. Instead, it could produce a cyclical shift in the student's social role. For example, the more advanced student could exercise and deepen his own knowledge by imparting it to others. This oscillation between the role of student and the role of teacher may, in the long run, become the essential characteristic of self-directed study.

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FRESHMAN SEMINARS AT HARVARD

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THE FOLLOWING PAPER has been adapted from the 1963 report¹ of the Harvard University Faculty Committee appointed to evaluate the seminar program's first four years. The report, which emerged from a long statistical study, led to the establishment of the program on a permanent basis. The evaluating committee interviewed, personally or by questionnaire, almost every student who participated in a seminar and a similar number, of equivalent potential, who did not participate. Members of the committee also talked with most of the faculty members who served as seminar leaders.

The Objectives of the Program

The Harvard College Freshman Seminar Program, introduced in 1959, was conceived with several purposes in mind:

1. To sustain the focused commitments which some students appear to bring with them,
2. To provide immediately, for students of all kinds, vivid and challenging introduction to some significant area of study,
3. To give the student a sense of engagement in the life of the university, and
4. To provide students in the freshman year better opportunity for intelligent decisions in determining their departmental concentration.

The Selection of Participants

During the years 1959-63, more than eleven hundred Harvard and Radcliffe freshmen, or about one-fifth of the combined freshmen classes, participated in 130 seminars. The original faculty

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¹ Bryon Stookey, Jr., *The Freshman Seminar Program: A Report to the Faculty of Arts and Science*, February 1963. Mr. Stookey was Director of the Harvard Freshman Seminar Program from 1959 to 1963.

legislation provided that a student might devote as much as half of his four-course program to the work of a freshman seminar. However, after the first year this provision was reduced to one-course credit, so that more students could participate in seminars. A pamphlet describing the seminars for the coming year was sent each summer to incoming freshmen, and all who were interested were invited to apply. Applications were collected by the program office and forwarded to the seminar leader in September along with background information from admissions records. Upon arrival, almost every applicant had an interview with the seminar leader. If too many had applied, the seminar leader used whatever criteria seemed appropriate in selecting the participants.

The Method and Substance of the Seminars

With regard to method it is possible to distinguish, in general, three types of seminars. One type was designed to provide "committed" freshmen early experience of advanced and adult work within a specialized field. An example of this type was Donald Menzel's seminar on the growth and behavior of sunspots. A second type examined the nature of a broad area of inquiry by treating in depth a sharply focused but representative subject. The late Clyde Kluckhohn's seminar on the Navajo Indian was an enterprise of this kind. Finally, there have been some seminars that set out to demonstrate the nature of a wide area by considering broad questions from the start. Such were the seminars directed by David Riesman, which ranged through literature, philosophy, anthropology, and psychology to study the relation of the individual to society.

The typical seminar has engaged 8 to 10 freshmen in a common inquiry, drawing increasingly on individual, independent work as the inquiry's context and shape gained clarity. Some have proceeded from broad initial questions to a variety of sharply focused inquiries; others have proceeded from a "narrow" inquiry to a variety of broad questions. All have sought, through a serious intellectual enterprise, to associate freshmen in a close, provocative way with an interested scholar.

The seminars have usually met once a week, generally for 2 to 4 hours in the afternoon or evening. Some have been directed largely by the seminar leader; others, in outward appearance at least, have been directed to a large extent by the students. The nature of the students' work between meetings has varied greatly with the nature of the seminars. Often it has been carried on in the laboratory, often in the library, and sometimes outside the

university,—in the streets of Cambridge or Boston, in museums, at the State House, or wherever an inquiry has led. In almost every instance, substantial initiative has been demanded in the organization and execution of individual work.

Most students have written extensively and many have published papers even though publication has been strenuously avoided as a goal of the seminars. The students' work has not been graded in any way, but a few students who have failed to take their work seriously have been excluded from their seminars or denied credit.

Because the seminars have depended so much on the interests and style of the seminar leader, it is difficult to give a valid general description of their substance or activities. However, some general characteristics that have been significant in determining the shape and impact of the seminars are summarized below:

1. The seminars have utilized inquiry in depth—

As a means of demonstrating the nature and methods of a significant academic area.

To provide opportunity for the student to discover what scholarly inquiry in *general* is about and the degrees of competence, imagination, discipline, and honesty required in its pursuit.

As a means of taking the student quickly to a level of inquiry at which the interdependence of fields becomes clear and inescapable.

To give early opportunity for the student to test his academic predispositions.

2. The seminars have sought, by associating the student closely with a member of the faculty and a small group of students—

To give live, close demonstration of the ways in which an educated mind approaches intellectual problems.

To provide a mobile vehicle for pursuit of investigations.

To make it possible to tailor instruction in such a way as to provide maximum challenge to each student and the group as a whole.

To encourage students to learn from each other.

To provide for self-examination and self-discovery a supportive context appropriate to the intellectual aims of the university.

3. The seminars have been voluntary and gradeless and they have been generally independent in their identity from departmental courses.

The voluntary and ungraded nature of the seminars has multiplied every one of their benefits. A seminar is not a "required" part of the freshman curriculum, and seminars assign active roles to their participants. This combination has led the student to feel that he has a personal stake in the quality of the seminar and a personal responsibility for it. He feels exhilarated when things go well, and guilty when things go badly.

The voluntary nature of the seminars has also been important for faculty, both in granting freedom in seminar offerings and in allowing flexibility in their form and content. For although the university is committed to repeated teaching of certain materials, that teaching will be most effective if its form and coverage are not elaborately pre-ordained and if faculty and students have brought themselves to it by initiative, interest, and free will. The seminars have operated under the special advantage of commitment to no particular coverage.

The fact that the students' work in the seminars has not been officially graded has proved to be very important. It has long been argued in defense of grades that they are after all only a symbol, and that if the student is genuinely concerned with learning, his attitude toward his education will be unaffected by grades. However, this defense may underestimate the impact of symbols. Symbols give meaning, and the symbol which is a grade may give powerful meaning to an intricate matrix of motivations derived from teachers, classmates, family, and community. It gives meaning to a set of motivations which have little to do with the student as an individual. In creating the ungraded seminars it was hoped that students might be encouraged to come to terms with themselves, and that then they would find motivation for learning in themselves or in the substance of the seminars.

Experience has justified that expectation, and partly because students discovered a difference between being "examined" and being "graded." Recurrently students have said that in the seminars they *were* examined. They were examined every time the seminars met—not just at mid-term and finals. They were examined by their peers as well as by the teacher, and they were examined in a way that

seemed to them more rigorous and effective, while more personal and constructive, than any formal examination. Furthermore, this kind of examination tended to seem unusually real because it did not involve talking or writing into a vacuum.

At its best, the environment of the ungraded freshman seminar can provide what is rarely found in courses—a creative environment for failure. Not only are students more willing to make mistakes, they are more willing to expose them. Because no one is grading and because criticism becomes a natural process, both students and seminar leaders feel freer to be incisive in their criticism. Just as every week the “student is examined,” so he has opportunity for failure—to fail *in detail* and along the way, rather than monumentally and totally on a final exam. Students present an idea, see it misunderstood, and have immediate reason and chance to be more lucid. They undertake experiments that cannot work. In consequence they learn not only that they were wrong, but more important, they learn something about experiments.

The Environment of the Seminars

As important to the seminars as the nature of their substance has been the nature of their environment. Here the seminar leader has had first importance.

The role of the good teacher in the freshman seminars has been not only to transmit knowledge but to provide personal demonstration of the nature of scholarship and to create a setting in which students might discover how to learn for themselves and from each other. There is nothing novel about that role, and it is never an easy one. It demands a mobile command of a wide area of inquiry, infectious interest in that area and in teaching, and the ability to sustain a constantly threatened balance between direction and nondirection. The closeness of the seminar leader may tempt the students to ask him for answers they should be discovering for themselves. Finally, the seminar leader may find that in the attempt to be both teacher and colleague he has not come across effectively as either. However, the seminar is designed to exploit this dual role, because the seminar's form is extraordinarily adaptable and offers the seminar leader the advantage of being able to teach in the way that best suits his temperament and his convictions.

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The influence of the seminar leader upon his students is more difficult to describe than is his role. However, from the first four years of the seminar program one important conclusion has emerged: the seminar experience has disproportionately increased the undergraduate's connection, or *sense* of the connection, with the faculty. Students who have participated in seminars have become, as a group, less hesitant about seeking out faculty members to ask questions, seek advice, or merely to engage in conversation.

It may also be worth noting that through the seminars the faculty have come to know well and early a great many undergraduates. Most of the seminar leaders recently interviewed who had given seminars four years before recalled every student who had been in the seminar and knew what had happened to many of the students in the intervening three years. Graduates of the seminars had continued as informal advisers or as faculty assistants. As juniors and seniors, they had acted as tutors or had offered advice on thesis preparation; and in several instances they had periodically reassembled for reunions.

Accomplishment of the Program's Original Objectives

As stated in Part I above, the Freshman Seminar Program at Harvard has sought to achieve four broad objectives. Evaluation of the relative success of these attempts follows.

1. To sustain preexisting commitment

In 1959 there was great concern at Harvard about the student who came with a strong and advanced interest in a particular field, but soon found himself in courses that neither offered much depth nor required initiative or involvement. In some instances this experience had not only been hard on morale but had seriously undermined a potentially fast and durable engagement in the life of the university. By offering, in some seminars, an opportunity to sustain that initiative and interest while simultaneously carrying on essential course work, the faculty hoped to capitalize more effectively the strengths of these "committed" students.

To some extent, this concern has proved to be wrong. In the first place, the evidence is that relatively few students bring to Harvard extraordinary commitment to a specialized field. In those exceptional cases in which students have brought with them a mature and well-founded competence, exploitation of that competence has often, especially in the sciences, not re-

quired a seminar. There have been students, however, who have come with a single-minded purpose and found in a seminar exercise for a professional preoccupation. When they have known themselves well, the opportunity has been invaluable. But most of the freshmen for whom the seminar program sought to provide opportunity of this kind have been far less confident of their academic predispositions and have used the seminars less to sustain commitment than as a means of testing it.

2. *To provide a vivid and challenging introduction to some significant area of study*

Freshmen not only want to know *about* the areas of study offered by the university but they also want to comprehend their essential nature. They not only want to know "What is known about chemistry, or philosophy, or history?" but also "What is its significance? *How* do we know, and how does what we know relate to other knowledge? What kinds of things are yet *unknown*? And why does anyone bother?"

The conventional course may often provide such insight, especially if it is taught by someone who visibly embodies the spirit of the field. But the conventional course, because it is committed to cover an extensive body of material, operates at a disadvantage. Even the "post-hole" approach (dig here for a while and then skip on and dig again), unless masterfully handled and augmented by opportunities for individual investigation, may often seem a frustrating drill.

Because there is in every area so much to be known it was a thesis of the seminars that they should offer immediate and vivid demonstration of the nature of the area, its relation to other areas, its bases and its methods, and its demands and limits. Otherwise, in the busy and essential process of learning *about the field*, the student may fail to discover, or discover too late, what the field is about or his place in it. By sacrificing coverage and the artificial neatness which coverage may necessitate and by entangling the student in the *work* of the field, it was hoped that both understanding and motivation might be enhanced. The seminars were in no sense to replace departmental courses; they were, ideally, to lighten their impact. There was concern that such experience might lead freshmen to conclude that scholarship is easy, that the hard and orderly study required in most fields is superfluous and beneath their dignity, that well-meaning seminar leaders might be overly protective, might strew roses along the path of scholarship. No case has

been found in which this has happened. Students who came with visions of roses have been disillusioned, and those who came without preconceptions have in most cases gained respect for both scholarship and the orderly and rigorous study which scholarship presupposes.

3. *To give the student a sense of engagement in the life of the university*

When the seminar program began, what seemed to be needed by many students, more basically than introduction to an intellectual area, was a sense of engagement in the life of the university. It was hoped that the seminars might provide such students, within the formal curriculum of the college, better opportunity to come to terms with themselves, and with themselves in the university.

A major goal of the seminars was to generate an atmosphere of intellectual hunger and to encourage the student to exploit imaginatively the resources of the university. It is clear from student reports that for at least some students the effects of this engagement have gone beyond the curriculum. Some have felt freer to pursue extracurricular interests to which they previously had feared they could not risk commitment. More often, however, the evidence speaks of a gradual but sure engagement in the curriculum itself.

One student wrote:

I found that the seminar work, where responsibility falls on me alone (although with guidance from the seminar leader), made me grow up to responsibility much faster than my other courses.

Another reported:

In narrowing our focus, we have widened our grip on the intellectual content of education and have been forced to see ourselves in a personal relationship with it.

4. *To facilitate intelligent choice of field*

Harvard's students are required to enter a field of concentration in their sophomore year. If a student were to choose a "major" intelligently, it seemed important that he understand what study in the university is about, and that he have a viewpoint within the university from which to examine his options. The seminars have sought to provide both.

The evidence suggests that the effect of the seminars has, for most students, been broadening. Although two out of three students have concentrated somewhere in the area of their seminar, they have frequently done so with clearer and broader under-

standing as a result of the seminar. For many students, although they remained in the same area, a seminar seems to have demonstrated effectively the importance of an understanding of other fields. However, there have been many whose experience in the seminars has served primarily to disillusion. One such student reported:

The seminar has not differed from my expectations, so much as philosophy has. The great virtue (or drawback) of a seminar is that it places you on intimate terms with its subject matter, so that you may soon find out whether or not your love of the field is genuine. I have discovered (not too late) that philosophy is not what I thought it was. For that discovery alone, the seminar has been very valuable to me—albeit somewhat disappointing.

Student and Faculty Reaction to the Seminars

Students have repeatedly said that their freshman seminar was the key intellectual experience of their first year. Close involvement with scholarship gave them early understanding of the nature of the university; they have stated that they felt engaged in the university's intellectual enterprise, an affirmation heard more usually from honors candidates in their senior year.

The majority of faculty members who have conducted seminars have been enthusiastic and believe in the program. They utilized the seminar method to experiment with innovations in the teaching of freshmen, and many of them conducted extraordinarily successful experiments.

The Future of the Seminar Program and Its Relation to Independent Study

In March 1963, freshmen seminars were established on a permanent basis at Harvard. The recommendation for their continuance stressed that the seminars should remain flexible, and that they should retain both their emphasis on inquiry and their voluntary, ungraded nature.

Underlying this recommendation was a belief, grounded in the experience of four years of seminars, that the freshman year was an appropriate time to engage students in the kind of "independent study" which seminars involve. This belief resulted, in large part, from evidence that the most important impact of the seminar leader upon his students has had to do with the inter-relatedness of different kinds of learning, and with scholarship and education

as "process." Unhappily, a frequent side effect of the lecture course is that it represents learning in discrete, neat units and as a completed process, or nonprocess. The student hears the lecturer report on the results of inquiry. Too rarely does he have the opportunity to see behind the report and the outline on the blackboard to the difficult, continuing, often erratic adventure on which they are based. And his consequent tendency to see learning as a mechanical accumulation of "givens" is encouraged by final examinations and by the structure of the curriculum. "So many lectures on revolution in history yield an accredited understanding of revolutions, and so many additional courses of lectures produce, at their conclusion, a historian." Teachers know that this is not so, and the student *suspects* it is not, but he too rarely has opportunity to discover what *is* so. The seminars, at their best, have given freshmen the opportunity to see a scholar engaged with them in the process of inquiry, and that process itself, rather than the classroom, has become the environment of learning.

INDEPENDENT STUDY IN HONORS PROGRAMS

Philip I. Mitterling*

THE EXPERIMENTATION introduced into undergraduate education by the national honors movement during the past decade has brought innovations which have invigorated the entire educational enterprise. Among all the innovations and accomplishments, none has been more significant than the introduction of independent reading and research. Talented undergraduates have demonstrated that they are capable of performing sophisticated and demanding work with only a minimum of supervision. Professors, on the other hand, have found a more reliable means of evaluating student ability and performance than the written or oral examination.

The value of independent study in honors has been emphasized by the Inter-University Committee on the Superior Student (ICSS) since its establishment in 1957. The fifth of the ICSS's 16 major features of a full honors program states: "Make the programs varied and flexible by establishing special courses, ability sections, honors seminars, colloquia and independent study. Course credit for this is important to the students. . . ." Of the 286 programs inventoried several years ago by the ICSS, 227 included independent work. These statistics, however, are neither inclusive nor current, which means that there are many more than 286 programs for able students and significantly more independent study efforts now being carried on in colleges and universities than the inventory indicates.

Independent study in honors programs represents a diversity of methods, but it is definable, nevertheless, in terms of established approaches and practices. Pedagogically, it is individualized instruction outside the formal class. It includes both learning the old and discovering the new. It is supervised reading as well as research, and it involves tutorial, colloquia, and seminar methods. Defined this broadly, it is one of the fundamental foundations of the comprehensive honors program, the program that seeks enrichment and flexibility as well as breadth and depth.

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Identifying independent study with general education, or the attainment of breadth in honors, would seem to be out of place, but in practice this is not the case. Different approaches to independent work, in fact, have given general studies new vitality. In some honors programs, students complete general requirements for graduation through tutorials or supervised reading, analyses, and writing. In others, general education is emphasized throughout the four years and is provided by utilizing a number of inventive interdisciplinary approaches, each involving independent work.

The colloquium, more than any aspect of general honors, has revitalized general studies. This is a conference method, usually interdisciplinary in content, instruction, and student participation, which covers a wide range of topics instead of a specific theme, and, unlike the seminar, emphasizes dialog and discussion rather than research and writing. But it is important to mention also that there is little consistency in the use of the words "colloquium" and "seminar" in honors programs. Many honors seminars employ the colloquium method.¹

The colloquium then is a method, not a course. It is independent reading and group discussion. Professor Bertram Morris, Chairman of the Philosophy Department in the University of Colorado, delineated this perceptively when he said: "The . . . colloquium is not a course. It is not a class. It does not ask for recitations. It does not aim at filling in subject-matter gaps. It is not intended to atone for educational corruptions. It is not a compensation for students bored by weary educational cynics, devitalized sensualists, or fanatical ideologists. On the contrary, it is at best a formal-informal meeting of select students with select professors for a discussion of select topics aimed at: (1) provoking discussion, (2) eliciting depths of students' learning, (3) cutting through the clutter of meaningless bits of arid specializations, and, in the process, (4) encouraging students to find their intellectual bearings. . . ."² The professor presides only to keep discussion in line. As Professor Morris further emphasized, superior students ". . . themselves determinedly. . . sift out the trivialities from the vitalities. . . ."³ and in this way the dialog becomes disciplined. Through disciplined conversation some students discover new intellectual strength, as well as humility, and gain a new confidence in themselves.

¹ See *The Superior Student* (Newsletter of the Inter-University Committee on the Superior Student), Vol. 4, No. 2, March 1961 and No. 3, April 1961, p. 28-30.

² *Ibid.*, Vol. 4, No. 2, Bertram Morris, "The Colloquium Is Not a Course," p. 20.

³ *Ibid.*, p. 21.

By way of depth, or specialization in honors, independent study had enabled the talented student to probe more deeply into the literature and intellectual discipline of his major field. Departmental honors have emphasized penetration and research rather than the mere accumulation of credit hours. This is especially true in the sciences where the National Science Foundation's Undergraduate Research Participation Program has stimulated independent work. Nothing comparable is being provided nationally for the budding humanist, but undergraduate humanistic studies are growing. Dedicated professors and liberal institutions are providing the guidance and the wherewithal for independent reading and research in these fields.

Departmental honors programs also provide enrichment through the use of the seminar (as distinguished from the colloquium). This is a conference method which follows a general theme and emphasizes reading, research, writing, and the preparation of reports, essays and papers. Acquaintance with a given body of knowledge and research in its sources is the principal objective. Again, this is largely supervised independent work.

Independent reading and research are also the bases of most of the honors programs in professional schools. Honors in engineering, business, agriculture, forestry, medicine, and others emphasize the achievement of flexibility in usually inflexible curricula through individual reading and research projects. The student is encouraged to set his own pace, develop initiative, and thus gain professional responsibility. Some professional schools also are successfully employing the colloquium method to provide interdisciplinary experiences. Rewarding colloquia are being offered in the School of Agriculture at the University of Illinois and in the School of Business Administration at the University of Washington.

The successful employment of independent study in honors programs would seem to foretell similar results on the graduate level. Yet Bernard Berelson's study of graduate education caused him to be sharply critical of the application of such work in the graduate school. In *Graduate Education in the United States* he expostulated: "There is a narrow line between more independence for the students and less concern for them—between independent work on the one hand and faculty neglect on the other. In any case independent study is a value not without its cost, and it is not altogether clear just how valuable it really is. . . ." Even though

* Bernard Berelson, *Graduate Education in the United States* (The Carnegie Series in American Education), New York: McGraw-Hill, 1961. p. 208-209.

performance certainly is not equal in all institutions, the value of independent study in honors is unquestioned. It has brought about the use of stimulating pedagogical approaches and has provided enrichment, curricular flexibility, and the individualization of programs. In effective programs, the honors graduate has learned self-motivation, attained a stronger sense of personal responsibility, and has gained intellectual strength.

INDEPENDENT STUDY AND THE ACADEMIC LIBRARY

Patricia B. Knapp*

THIS PAPER discusses the library implications of independent study defined in two ways. The first part accepts the most literal definition and points to the rather obvious facilities and services the library might be expected to provide in accordance with the degree to which the student is "independent," that is, responsible for his own study. The second part discusses the library implications of "acquiry" and "inquiry,"¹ referring particularly to our experiences with inquiry at Monteith College.²

"Independent" vs. "Individual" Study

When an independent study program is designed to accommodate a burgeoning student population, it may simply inundate the library. More students need more chairs and tables, more books, more librarians to charge out the books. But this impact stems from the increasing enrollment not from the independent study as such. Let us begin this discussion, therefore, by limiting ourselves to the kind of program which is likely to have more than a merely quantitative impact on the library.

From the start we can rule out the kind of independent study which involves programmed textbooks or teaching machines and the kind which calls upon the student to read the purchased books he would have read in a traditional course, merely providing him with less direct assistance in mastering them.

Similarly, let us rule out the kind of independent study which is organized around a long list of required readings. Such a course

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¹ For a discussion of this useful distinction, see Winslow R. Hatch, "What Standards Do We Raise?" *New Dimensions in Higher Education*, No. 12, Washington: U.S. Government Printing Office, 1968, 28 p.

² Monteith College, Wayne State University, was founded in 1959. It provides a 4-year curriculum in general, liberal education which its students take concurrently with pre-professional studies, specialized work in one of the major fields of the College of Liberal Arts, or an individually planned program of advanced general studies. The Cooperative Research Program of the U.S. Office of Education provided Monteith with a grant to develop a program of library-instructional integration in the Monteith curriculum (Cooperative Research Project No. 874, "An Experiment in Coordination between the Library and Teaching Staff for Changing Student Use of a University Library").

makes the same demands on the library whether the evidence of student reading is expected to appear in class recitation, group discussion (whether the instructor is authoritarian, permissive, or not present at all), quizzes, papers, or merely in a final examination. Thus the number of students rather than the style of presentation makes a difference to the library, if the library is expected to provide the books on the reading list. (The ever-increasing availability of paperback editions makes it less and less necessary or economically efficient for the library to provide such readings.)

The independent study program which would seem to have more than a purely quantitative impact on the library is the kind of study program which calls for individualized work. It is a study program in which the student is not merely expected to study alone and at his own pace but is also given considerable freedom to determine what and how he shall study. In honors seminars, tutorials, directed reading courses, and undergraduate research projects, the student is usually expected to develop his own line of inquiry and to pursue it in his own way. If more students are enrolled in programs of this kind, the multiplication of individual choices will clearly require greatly expanded library collections and larger and more specialized reference collections and services. Indeed, if such programs are offered to large numbers of students, many college libraries will find it impossible to provide adequate resources for them.

But are we not still talking about a quantitative impact on the library? Does the tremendous growth of independent study programs really mean only that libraries need better support so that they can provide more of the same, or does it mean also that a different order of library service is required? To find the answer to this question, let us begin by considering the library requirements of individualized work in certain typical "conventional," that is, nonindependent courses.

No independent study program opens up a wider range of potential subjects on which the library might be expected to provide materials than the library paper traditionally assigned in freshman English. Here the student is obliged to locate library sources and is expected to follow prescribed procedures in using them, but he is (at least theoretically) utterly free to write on any topic he chooses.

Similarly, for the term paper assigned in most conventional courses the student is often expected to use sources other than his textbook or the books listed as collateral or "optional" readings for the course. Here the range of topics is not so broad, because it

falls within the limits set by the scope of the course. But the student will be expected to delve more deeply into his chosen topic. The typical term paper, then, not only allows the student considerable leeway in his choice of topic but also encourages him to explore that topic in some depth.

At a more advanced level, the librarian is accustomed to dealing with the intellectual elite of the student body, those students who enroll in small, advanced seminars, those who sometimes become the protégés, the research assistants, almost the junior colleagues of certain members of the faculty. Such students are encouraged to develop their own specialized interests and to pursue them intensively. In the process, they often tax the resources of an undergraduate library.

Each of these situations in conventional courses calls for individualized study. But in each case there are limits which keep the demands on the library within manageable bounds. The freshman English professor is never so concerned with the student's freedom in choosing a topic for his paper as he is with the student's experience in locating, organizing, and presenting information. The student is encouraged, if not required, to choose a topic on which materials are readily available.

Similarly, the prudent term-paper writer is likely to select a topic on which the library has adequate holdings. Such a topic may gain an extra advantage from the fact that the library collection usually reflects the particular interests of the faculty.

When we move to the work of the academic elite in the advanced seminar, the tutorial, or the independent reading course, there is no longer an assumption that the student is expected to fit his pattern to the available cloth. There is usually, nevertheless, a certain self-limitation which arises from the close association such students have with the faculty; the interests of these students usually stem from the enthusiasms of the faculty. Inquiry at this level, moreover, while not precisely limited, is at least shaped by the student's previously acquired familiarity with his field. The direction of his inquiry is inevitably influenced by his knowledge of the field's major concepts, its classic authors, its accepted methodology, even its journals and societies. The library requirements of individualized work at this level are not very different from those of the faculty. The library provides for them as well—or as poorly—as it serves the needs of the faculty.

The reason why individualized work in such conventional situations does not seriously overtax the resources of the library is that the independence of the student is never as complete as it seems. His work is prestructured in one way or another. The pro-

fessor recommends topics, he suggests readings, he guides procedures, he serves as a model; in one way or another he directs the inquiry. Only in the case of the academic elite does the prestructuring derive at least partly from the student's own knowledge and background in his field. Does this mean, then, that the opportunity for all-out independent study can and should be offered only to those students who have acquired a solid background in a subject field, and even then, perhaps, only to the more gifted among them? I think not. But it does mean that we must find some substitute for faculty prestructuring, not only to keep the work within the range of the library's capacity to support, but also to make it a fruitful learning experience for the student.

We may be able to arrive at some conception of what such a substitute might be as we consider the library implications of the acquire-inquiry dichotomy.

An Inquiry Into "Acquire vs Inquiry"

In his pamphlet, *What Standards Do We Raise*, Hatch indicates that—

A distinction should be made between "instructing" and "teaching." The necessity of making this distinction is the demonstration that in the act of acquiring information the actual presence of a teacher is not necessary and may not be desirable; that individual students can "instruct" themselves (independent study) and apparently do this quite effectively. If "informers" or "instructors" have to be drafted to manage acquire, such as a librarian or a technician in a learning resources center, they can be drawn from the ranks of those who are most adept at purveying information. Teachers may need to assemble and prepare such materials as books, films, and tapes; they may occasionally make televised and other presentations, transcribe their lectures and "program" some of their materials. But they should not curtail—or be permitted to curtail—the amount of time they have for "teaching."³

This statement, examined in the light of the distinction made above between independent and individualized study, suggests that where students are independent in the sense of being free to work alone and at their own pace, "teachers may need to assemble . . . materials." Let us put this type of independent acquisition of information in the category with independent study through teaching machines, textbooks, or prescribed readings and rule it out of the present discussion as having no impact other than quantitative on the library. But where students are also given some measure of independence in deciding what and how

³ Hatch, *op. cit.*, p. 22.

they will study, the librarian may be called upon to "manage acquirry," to "instruct," to "purvey information."

These three terms are used almost as if they were synonyms. It seems to me that they are not. Perhaps a discussion of the flavor of difference among them may shed light upon the new role, or rather different emphasis in role, for the librarian which is indicated in the quoted statement.

Librarians would probably express the function of "purveying information" as "assisting the student in his search for information." This is not a new function at all; this is what they do all the time. But neither is it a substitute for the "prestructuring" which, as we have seen above, makes it possible for libraries to cope with the individualized work in conventional courses.

Such prestructuring is much more clearly suggested in the phrase "to manage acquirry." Managing the acquisition of information suggests planned learning experiences. The idea of the planned learning experience is one which deserves much closer examination than can be given here, but, for the moment, let us say that it implies at least that appropriate resources should be available, that they should be organized for retrieval, and that the student's experience in retrieving information should be neither the passive acceptance of "spoon-feeding" nor the active but time-consuming process of trial and-error. It should be a genuine learning experience in itself; it should contribute to the student's sense of satisfaction in the kind of discovery which results not from the lucky accident but from constructive effort.

Concern that the student's acquisition of information in the library or in the "learning resources center" be a true learning experience is also implied in the suggestion that the librarian (or technician) serve as an "instructor." But where "management of acquirry" suggests planned learning experiences, "instruction" suggests accommodation to students' individual differences in capacity, interest, need, and cognitive style.

Until recently, college and university librarians have rarely been given the opportunity, let alone the responsibility, to manage acquirry (except in the sense of acquiring and organizing the library collection) or to instruct (except in the sense of helping students locate information). If they are to do so now, in connection with independent study programs, they must be drawn into active collaboration with the teaching faculty.

If the librarians are to have appropriate resources available and are to manage them so that they will enhance the student's learning, they must work closely with the faculty in deciding what materials are to be assembled and how they are to be or-

ganized. They should strive to become—and should be accepted as—learning materials experts.

If they are to instruct students in the acquisition of information, they must be cognizant of the teaching aims of the faculty. They need to know the answer to the question: information for what? They should be able not merely to assist the student in his search for information, but also to help him discover what information he needs, to help him develop a strategy for the acquisition of information.

If librarians are to instruct effectively, moreover, they must know something about theories of learning, educational philosophy and psychology, principles of curriculum construction, teaching methods and procedures, and the social forces which affect education. They must see themselves, and must be seen by faculty and students alike, not as clerks, not as information specialists, not as purveyors of information, but as educators.

In summary, the case presented thus far argues that independent study defined as "independent acquiry" has implications for the library which are not merely quantitative but which indicate a significantly different role for the academic librarian. It follows that any college which embarks on a program of independent study so conceived must be concerned not only that the library has adequate space and adequate resources but also that it has enough librarians, librarians who are *qualified* to take on this new and extremely demanding role, and that these librarians are given more than formal opportunity to collaborate with the teaching faculty.

Let us now consider the possible library implications of "independent inquiry." Hatch defines inquiry as "that process of learning and of teaching in which information is examined. It is that which is done after information has been provided or learned; it is the reason for acquiry. Inquiry is the essence of honors, of independent study—properly understood and practiced—and of problem-oriented instruction."⁴

In discussing the library implications of independent inquiry so defined, I should like to draw upon certain experiences at Monteith College, particularly one which demonstrates the relationship between "inquiry" and "acquiry." The first major undertaking students encounter at Monteith is a freshman research project assigned in the social sciences course in the third quarter of the freshman year. The assignment is highly valued by the faculty—and they communicate this view to the students—as an

⁴ Hatch, *Ibid.*, p. 21.

experience which can convey a fundamental understanding of the nature of social science, the kinds of problems it deals with, its basic assumptions, the various approaches, theories, methods, and techniques it employs. Each student must select a research question which interests him, develop a plan for studying the question, carry out the plan, and report his results. (Since this is freshman work, it is elementary and limited in scope. But it is "real" and "original" work all the same.)

Here the inquiry is likely to begin with a problem stated in very general terms; the student acquires information, perhaps about how others have tackled similar problems, and he attempts to refine his own statement. He may arrive at a general hypothesis. The inquiry now moves toward speculation as to potential indicators to be used in formulating an operational statement of the hypothesis; the student acquires information which helps him decide which indicators promise to be valid. The inquiry next turns to methods of gathering data pertaining to the selected indicators; the student acquires information about research techniques and instruments. And so on and on. Thus inquiry leads to inquiry, inquiry to further inquiry.

The first time this project was assigned we attempted to make the student's acquisition of information as independent as possible. Every student was required to use the library to orient himself to his own problem. (Some students selected problems for which the library became also a source of data: for example, in historical or content analysis studies.) He was expected to find sources which would help him define his problem and place it in the context of published social science research, sources which would suggest appropriate data-gathering methods and instruments, and sources of background information. In preparation for this library work a one-hour briefing on some of the major bibliographical tools in the social sciences was offered, and copies of the Wayne State University Library handbook were distributed.⁵ The results of this sink-or-swim approach were almost disastrous to the cause of independent inquiry. The students were lost and baffled and angry, and the faculty were dismayed at the quality of the references which appeared in the final papers. Many students reported that this university library of three-quarters of a million volumes had "nothing" pertaining to their problems. Most found "something" but what they found the faculty judged

⁵ Monteith has no library of its own; Monteith students use the Wayne State University libraries. The library's capacity to provide resources for independent inquiry is less of a problem here than it would be in a smaller institution. The question of what the student derives from the experience, however, is still to the point.

inappropriate for college-level work. As a result, many of the instructors were ready to conclude that freshmen students simply could not be trusted to find their own sources in the library, that they had to be told what to read.

Hatch states that—

Quality may be indicated by a college's disposition to make a distinction between the acquisition (*acquiry*) and the examination (*inquiry*) of information. It is manifested in its success in getting students to accept a larger role in "*acquiry*" and in getting its faculty to make their teaching a joint "*inquiry*."⁶

After examining our first unhappy experience with the library component of the freshman research project, we concluded that our difficulties arose neither from the unwillingness of our students "to accept a larger role in *acquiry*," nor from the faculty's unwillingness "to make their teaching a joint *inquiry*." They resulted, rather, from the interplay between inquiry and *acquiry*, from the students' lack of adeptness in the intellectual process of using the question (*inquiry*) to shape the course of the search for information (*acquiry*) and then of using the information to direct further inquiry. From our work with the Monteith program, we have found, in general, that average freshman students suffer from the following handicaps:

1. They have a basic misconception of the function of information in inquiry; that is, they look for and expect to find "the answer to the question" instead of evidence to be examined.
2. They are unsophisticated in evaluating books. In the necessarily rapid process of using the open shelves, they select books without taking into account such clues to their probable worth as date of publication, qualifications of author or sponsor, or quality of references cited. Instead, they select, on the basis of relevance (as close as possible to "answering the question"), readability ("not too technical"), and persuasiveness ("I agree with it.").
3. They think that the card catalog, the classification system (the arrangement of books on the open shelves), and the *Readers' Guide* are the keys to contents of the library, without really understanding the organization, the limitations and advantages of these tools.
4. They are not aware of the organization of scholarly literature. For example—

⁶ Hatch, *op. cit.*, p. 5.

- a. They do not appreciate the subtle difference between the organization of literature within a discipline (in terms of theory, concept, approach, method, school, and style) and the organization of literature within the library (in terms of subject, form, period, and place).
- b. They are not acquainted with the bibliographical tools which provide access to scholarly literature: that is, the "guides to the literature," the surveys of research, the annual reviews, the abstracts, and the special indexes.

In the conventional, nonindependent program, the constant guidance of the faculty obviates these difficulties. It is possible that an independent study program which provided for intensive collaboration between librarians and faculty and which then gave librarians responsibility for "managing acquiry" or instructing could make similar guidance available. But it is also possible that students can be *taught* how to identify, locate, and use information in the quest for understanding, and that capacity for independent inquiry need not be merely a concomitant of mastery of a field of specialization for the elite student, but an instrument for learning for all students.

This is the possibility explored at Monteith. After our first experience with the freshman research project, we have made considerable progress toward diagnosing the problems encountered and devising methods of dealing with them. We hope that the results of our efforts in this direction, presented in the final report of the Monteith Library Project,⁷ have contributed something to the achievement of a more precise view of the implications of independent study for the academic library.

⁷ Patricia B. Knapp. "An Experiment in Coordination Between Teaching and Library Staff for Changing Student Use of a University Library." (Final report of Cooperative Research Project No. 874, U.S. Office of Education; microfilm and photocopy available for purchase through Library of Congress Photoduplication Service, Washington, D. C. 20540.)

INDEPENDENT STUDY AT KNOX COLLEGE

René N. Ballard*

SEVERAL YEARS AGO Knox College undertook to emphasize as one of its important educational objectives that its students learn to master knowledge independently. The Ford Foundation granted funds to enable us to more readily provide the faculty with the necessary time for planning and for preparing appropriate study materials.

It might have been helpful if from the outset the Knox College faculty had avoided the use of the words "independent study." We had difficulties in discussing the subject because the term had acquired a special meaning from the experience of most of the teachers, and it was presumed to indicate only situations wherein individual students pursued individual studies for which they were specially enrolled: that is to say, a course on the famous model of Mark Hopkins. The investigations, visitations, and discussions conducted by the faculty during the past several years have enlarged the concept of independent studies to encompass all those curricular plans, course outlines, teaching procedures, and learning situations which endeavor to rely more upon the student and seek to make him less dependent on the teacher's tutelage. The term is now generally understood to include all appropriate instructional devices introduced into our courses to accomplish these ends. In part, educational organizations deal with quantities such as numbers of teachers and students and must strive to distribute wisely the talent of the former with the abilities of the latter and the time of both. These economic relationships cannot be ignored in educational enterprises and every academic term witnesses some changes in the instructional process which were provoked primarily for economy and not calculated for improvement of the learning-teaching situation.

Another basic policy decision made by Knox College was that we should not approve some model program and inaugurate it by general faculty regulation. Rather, Knox attempted to clarify the definition of independent studies, communicate appropriate infor-

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mation on other programs, and stimulate desirable educational innovations in teaching procedures by individual faculty members in their own course plans and in the departmental plans for its "major."

Plans were made for involving as many of the faculty as possible in the program. Twenty faculty members have visited other colleges in order to discuss with faculty and administration those aspects of their educational activities related to the problem of independent studies. In addition, faculty members in ten departments were given particular assignments to expedite the definition and review of the major in that department.

The importance of these faculty visits can hardly be overestimated for their effect on the attitudes of the faculty toward thoughtful changes in our educational program. Considerable information was brought back as to what might be done in theory and what probably was unwise in practice. More flexible dispositions toward educational innovation or experimentation were stimulated. An important by-product of these expeditions, exceeding the direct bearing on independent studies, was the enthusiasm of the faculty teams for the experience of talking "shop" (that is, teaching techniques rather than subject matter) with their professional colleagues on other campuses.

The Independent Studies Committee early concluded that we needed to know more about the actual teaching techniques used on the Knox campus, the attitude of the faculty toward kinds of instructional situations, and the study practices of Knox students. A plan for such research was prepared and several research projects implemented. In addition to these collective activities by the Independent Studies Committee, individual members of the committee assumed particular responsibility for research projects and for the revision of courses that would particularly exemplify the independent study by students.

The findings of these campus research projects were discussed at faculty "round tables" during the academic year 1959-60. Early in the discussions the faculty agreed that it was important to prepare the student to be more self-reliant by making sure that he had the necessary general skills of the competent student. It was also recognized that an expectation must be developed in the student that he would be assigned enlarging areas of responsibility. It was also realized that early in the student's college experience he must learn to expect assignments for which he was not to receive detailed tutelage, to anticipate that such responsibilities were to enlarge, and to realize that a particularly high degree of self-reliance was one of the objectives of education, espe-

cially in the field of his major. Obviously, in order to accomplish these ends the student must be given opportunity and considerable practice in the courses in which he enrolled.

The experiences which obviously should occur as early as possible in the student's college career were those which enhanced his general confidence and competence in using library resources and in forming the habit of becoming familiar with reference aids and with the bibliographies available in several subject-matter areas. Closely related to this educational concern was the realization that more independent studies would undoubtedly result in the increased preparation of reports and in the writing of papers which were based upon the library collections or on other research materials. The faculty, therefore, undertook to strengthen instructional procedures and educational standards in these areas.

A campus style-book was prepared and adopted by the College in order that all departments might more readily require better performance of the student in the organization, form, and annotation of written work. Previously, the responsibility for preparing the student to do such work had rested almost entirely upon the English Department, and the courses were scheduled in the second semester of freshman English. The faculty, however, discovered a serious instructional gap having to do with those students who because of high placement scores in English composition had been exempt entirely from freshman English. Some of these students, it was apparent, were handicapped because they had not had the specific training needed in library use and in the proper scholarly form of research papers. To take care of this need, these students were now required during the first semester of their freshman year to take a one-credit course which consisted of writing a library research paper on a subject related to some topic in a course which they were taking during their freshman year. The subject matter and mechanics of these papers were developed in consultation with the dean of the college and with the faculty member in charge of the freshman course. The completed papers were read also by a member of the English Department. This development has been very successful in accomplishing the desired ends. Important by-products have been to involve all of the faculty to some extent in direct use of the standards of form required by the style-book and through conference in providing some guidance to rather superior freshman students who at the outset of their college careers were engaged in an independent study project.

The library activities required in connection with this new venture were greatly facilitated by the establishment in the library

of a new staff member called the Consultant for Library Studies whose particular responsibility was to improve the competence of students in the use of library resources and to assist members of the faculty in directly incorporating the library as a facility for their course instruction. Several of the course innovations discussed in the following paragraphs are based upon such improved liaison between the classroom teacher and a staff member of the library.

The Consultant for Library Studies seeks to exploit the teaching opportunities created when individual students come to the library with problems arising from class assignments. On these occasions the consultant has an opportunity to supervise the students in the use of the catalogs, reference books, indexes, special collections, and special facilities such as the microfilm reader. She seeks to train such students from dependence upon a member of the library staff in order to proceed more competently and confidently in the utilization of the library's resources. To anticipate such opportunities for individual instruction in the library, indeed to help create such opportunities and to exploit them to the maximum, it has proved desirable for the Consultant for Library Studies to develop close liaison with the classroom teachers. To accomplish this, she has held many conferences with faculty members, met with several departments to discuss their particular relation to the library, consulted with individual faculty members concerning assignments which they had made requiring library research, and encouraged faculty members to submit course plans to her. This has frequently resulted in the modification of course plans in order to directly involve the library consultant.

Special class assignments involving the services of the library consultant have often been made; class-period time has been set aside for classes to come under her supervision, library tours have been arranged; and schedules requiring groups of students to come to her for demonstrations of library facilities have been set up. In addition, teachers have asked the library consultant to do special reference work in connection with the closer coordination of the library with their teaching. In some instances she has visited class sessions in order to become more conversant with the course procedures and objectives related to library services. The library consultant has become particularly concerned with the development of facilities in the library which would adequately serve the instructional operations which are her particular responsibility. She is presently making a study of the facilities of the library and methods for improving their maximum use. She has also become particularly concerned with the periodical and

reference collections in the library and with their organization to provide maximum usefulness to students.

The expectation that more writing and preparation of individual student reports based particularly upon library use would occur has definitely been born out by our experience. The following course procedures demonstrate how instruction may place special emphasis on preparing students for more independent study:

1. The freshman course in Contemporary Political Problems, intended primarily for freshmen and sophomores, includes among its objectives not only a better comprehension of the major political issues of the present but also a familiarity with the basic tools of political science. To achieve these objectives, a great deal of independent work, probably over half the student's total work in the course, is required in the form of papers prepared from materials available in the library. The library consultant works very closely with the instructor of this course in planning the orientation of students to library use. In fact, she takes over some class time for this purpose, and furnishes the students bibliographical instructions on the most important reference instruments and research facilities.
2. The first course in Economics has been revised to require extensive library research. Each student is required to prepare six original papers during the term, each dealing with a different area of economic problems.

Both political science and economics departments are now offering in the form of independent study some of the course work which formerly was provided in conventional classes. All majors are expected to participate in such studies. These course changes are characterized by a drastic reduction in the number of class meetings and by an increase in the number of individual oral and written reports. Oral examinations have also been utilized.

The most advanced departmental change in this direction has been made by the Department of Psychology. This department now expects that all of its majors will offer toward the fulfillment of the major requirement at least one course for which the subject matter has been entirely mastered by the student through supervised independent study. Competence in independent research, systematic reading, and the adequate reporting of the same, oral or written, are specified as one of the educational objectives of the major department. Most of the advanced courses in the department may be taken by a student as an independent project instead of in the regular class procedure. For reasons of

sound economy, however, this is not permitted during those terms in which the course is offered in the ordinary form. Potentially this means that practically all parts of the psychology major program are offered at one time or another as forms of independent studies.

The emphasis during the past two years on more independent study on the part of students has been paralleled by an extraordinary increase in the use of the library by students. Although cause and effect are difficult to demonstrate for a development of this kind, there is no doubt that the dramatic increase in the use of the library has been partly the result of these changes in our teaching procedures. Several of the departments have become more concerned than ever before with the adequacy of the library collections in their fields, adequacy as to breadth, depth, and variety of materials available. It is certainly apparent that an increased emphasis upon independent study extends the demand upon library resources.

The faculty activities summarized above prompted demands for certain revisions of the educational program of the college. As a result, the faculty standing Committee on Instruction prepared a revision of the general education program. Concurrently, the Executive Committee of the Faculty prepared a proposal for instituting comprehensive examinations. This new program was adopted by the faculty at the beginning of the academic year 1960. Among its purposes, this program of comprehensive examinations emphasizes the "reorganization of the major fields of study so as to include not merely separate course units for each student, but also a mastery by him of some materials mainly on his own responsibility and to determine the extent to which he has developed some competence in this last aspect." The program, as adopted by the faculty, grants academic credit for student involvement during the senior year in comprehensive examinations in order to recognize this kind of independent study in his major program.

We believe that Knox College has effectively pursued the objectives set forth for the development of independent studies. Our accomplishments may be summarized as follows:

- A. The practice of independent studies has been greatly extended, and current curricular and instructional changes may be expected to utilize this educational method even further in the immediate future.
- B. This extension of independent studies has been accomplished in a variety of ways—

1. By establishing procedures which help students to learn to study by themselves.
 2. By extending faculty investigations into the curricular and instructional practices at other institutions.
 3. By conducting research into the learning-teaching situation at Knox College.
 4. By introducing curricular changes in the major departments and by implementing a program of comprehensive examinations.
 5. By establishing better liaison between the classroom and the library.
 6. By instituting laboratory procedures in departments where they formerly had not been utilized.
 7. By effecting desirable economies in the use of faculty time and energy.
- C. The experience of the faculty in working toward a program of independent studies has helped to create a disposition favorable to innovation or experimentation and to the need for systematic research and evaluation of the quality of our educational program. This attitude has manifested itself in suggestions from several members of the faculty that we continue to encourage such critical studies of our educational program.

"SEARCH" BEHAVIOR IN UNDERGRADUATES

Stephen Kaplan*

IT SEEMS UNFORTUNATE that the college student so rarely has the opportunity to engage in those very behaviors that we hold to be the sign of a well-educated person. The student is told what to do and when to do it; anything else he does is rarely reinforced and often penalized. In attempting to remedy this situation, I have experimented with a program of required freedom in the introductory classes I have taught over the past three years.

Procedure

At the beginning of the semester the students are informed that they are expected to devote the traditional two hours out of class for each hour in class. Since the assigned readings are brief (averaging under 50 pages a week), the remainder of the time is to be spent reading portions of various psychological books and articles *of their own choice*. The students are thus invited to peruse the psychology shelves in the library. To emphasize becoming acquainted with the range of available material and becoming skilled at selection of appropriate sources, the students are encouraged to read articles and chapters or parts of books rather than entire books.

Three times during the semester a Reading Log is collected. This document includes a bibliography and an account of student adventures in the library. The emphasis is on commentary, evaluation, criticism, and relationships with other psychological concepts with which the students are familiar. Summaries are strenuously discouraged. The feedback the students receive on their logs attempts to guide them toward a more critical and thoughtful discussion, and away from summaries. They are also reinforced for reading on a variety of topics and for their willingness to return a book after reading only a few pages if it proves "uninteresting or inappropriate. Despite the students' pleas, their burden of selection is not relieved by receiving any list of "approved" or "appropriate" or "safe" books.

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Results

This technique has met with somewhat astonishing success. The students read more this way than I would dare require of them—several thousand pages in the course of a semester is not unusual. Their level of discussion shows marked improvement from the first to the third log, as does the range and quality of the material selected. The slower students find reading other introductory texts helpful in understanding class material, while the brighter students often select material of surprising difficulty (e.g., Stevens' *Handbook* articles).

One reaction to the procedure is provided by this excerpt from a student's evaluation:

The method and presentation of reading logs was a new one to me, and I have found it superior to any other type of supplementary work. Its advantages for me have been many, and I can see few weaknesses in the assignment. (Those I have found mainly concern the way in which I carry it out.) No notes—which I find time-consuming and distracting—are necessary when reading, because summaries are not required. This fact alone makes reading much more appealing. Reading can be varied and cover a broad range of topics since no entire book need be read; but a student may also choose any particular area of interest and read intensively. In either case, the subject appeals to the student, and results show it.

The manner of assigning the logs requires self-motivation of the student and demands regular reading without immediate reinforcement. This kind of persevering, independent behavior is not fostered enough in our educational system. Moreover, besides determining what and how much he reads, the student must think critically and constantly while reading in order to present a reasonable commentary, and this interaction increases learning. The student also learns to correlate information and apply what he learns any time it is relevant. In the course of his reading, he not only learns which styles are appealing and which are not, but also the names and some ideas of prominent psychologists with which he might not otherwise have become familiar.

In order to assess the reaction to this technique more systematically, questionnaires were administered to each of the five sections of introductory psychology exposed to this technique. One section did not receive the questionnaire until a year after the students had completed their course; the other questionnaires were administered near the end of the semester, with the understanding that they would remain in a sealed envelope until grades had been sent in. The five introductory sections represent a fairly wide sampling of students and contexts. They included an ordi-

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nary introductory group, an honors introductory course, a natural science introductory course, and two sections of the natural science introduction for honors students. The total sample is 65 students of whom 29 are in the honors program.

The results of the questionnaire are tabulated below. Since the results are quite similar across the various sections, the averages for the total sample are presented here. It is clear from the responses to the first item that the students are generally favorable to the procedure. The same attitude is reflected in the responses to the item concerning the "lasting benefit" of the procedure.

RESULTS OF READING LOG QUESTIONNAIRES

1. What is your general evaluation of reading logs?

Percent

excellent	30
very good	34
good	28
fair	7
poor	1

2. Under this system do you feel that you put in—

Percent

more work?	75
same amount of work?	20
less work?	5

3. Rank the following in terms of how much lasting benefit you derive from them with "1" indicating most, and "4" indicating least benefit.

Rank

assigned reading	2.02
term papers	2.44
book reviews	3.38
reading logs	1.95

4. Rank the following in terms of how much fun you feel they are, with "1" indicating most fun, and "4" indicating least fun.

Rank

assigned reading	2.60
term papers	2.66
book reviews	2.95
reading logs	1.56

Perhaps the finding of greatest interest is that there is overwhelming consensus that the Reading Logs approach is at least as much and probably more work than other procedures; it is also more fun. This coincides with my impression that the students not only are often highly motivated in a self-directed situation, but also find this a more pleasant kind of motivation.

INDEPENDENT STUDY OF PROFESSIONAL EDUCATION AT CORNELL

L. B. Hixon*

THE UNIVERSITY OF BUFFALO, Cornell University, the University of Rochester, and Syracuse University are cooperating in a series of projects designed to aid in the improvement of education through demonstration of new ways of preparing secondary school teachers and school administrators. The two-part program, intended to become a permanent part of the work of the universities, is being supported during the initial 6-year stage by a grant from the Ford Foundation. The projects, both experimental and demonstrational in character, are administered through the four schools of education with other divisions of the universities closely involved wherever possible.

One aspect of the secondary education project, Inter-University Project I, involves the exploration of ways to implement study of superior students in teacher education programs. Independent study is a major concern.

The Project Definition of Independent Study

The Inter-University Project I defines independent study as a pattern, fundamentally honors in nature, in which students read from a basic bibliography prepared by specialists, have individual conferences with staff members, and receive specific tutorial direction. Formal courses in professional education are not required; rather students are encouraged to work independently.

At Cornell, honors study in philosophical and psychological foundations of education provides for a learning situation where important educational ideas are examined through reading of original writings, requiring extended study and reflection. Methodology, observation, and learning experience are brought into tune with first-hand exploration and trial; independent action is emphasized.

On the campuses of the other three cooperating universities,

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somewhat similar programs are being administered, differing according to the collegiate settings and traditions of the institutions. Each university's program operates independently from the others. The exchange of ideas and experiences is maintained through visitations, conference, and correspondence. The joint efforts operate under a project coordinator, and the free-flow of information between the four universities is constant and voluminous.

The Cornell Objectives

A major objective of the project is to examine and explore variations in independent study of teacher education which will better prepare the more able student for secondary school teaching. This objective includes trial and experimentation with means (1) to coordinate and integrate work in professional education with allied disciplines of psychology, anthropology, sociology, philosophy, and others with the subject being taught, (2) to analyze and try out a body of content in professional education subjects appropriate to the needs of honors students, and (3) to study and analyze the 5-year collegiate education of potentially high-gearred secondary school teachers in the effort to develop a total program giving greater direction and coherence to the studies pursued by those entering teaching and resulting in greater maturity in thinking and working with ideas.

Accompanying this objective are a number of key questions hopefully to be answered during the life of the project or in subsequent follow-up investigation. These questions include:

- (1) Will independent study of professional education extended over years rather than in semesters or in regularly assigned classes produce a clearer and deeper understanding of teaching?
- (2) Through what ways and means may independent study be used to increase the meaningfulness and importance of professional education, particularly as applied to the more able student?
- (3) How may independent study of professional education be abetted through programmed instruction and other technological advances?
- (4) What content of study is appropriate for teacher education, particularly honors students?

- (5) What timing and arrangements are best for tutorial conferences? How may the increased demands on professional time and energy, as expended in tutorial conference, be met and adjusted?
- (6) Through what means and organization may independent study be augmented through interdisciplinary approaches?
- (7) What parts of the independent study program in operation for honors students may be adopted or used outrightly with the average students?

Student Selection

The selection of Cornell undergraduate students is based on the fulfillment of at least two of the following criteria:

- (1) Is eligible for or is actively participating in an honors program.
- (2) Ranks scholastically in the upper one-third of his college class.
- (3) Maintains an academic average of 80 (B) or better.

Graduate entrants from Cornell are required to score at the 50th percentile rank on the Miller Analogies Test National Norms for institutions granting the master's degree in education, or to rank in the upper one-third of their graduating class. Graduate entrants from other institutions must meet both criteria in order to be eligible for acceptance. In addition, all entrant candidates must secure the approval of the staff representing their teaching areas and acceptance by the School of Education and Graduate School.

The above criteria are considered as minimum requirements. In the interest of selecting outstanding students other factors are used to make comparisons and aid in the final choice. These criteria include the breadth and depth of study in the teaching field, recommendations, activities, and social accomplishments.

The Program at Cornell

Independent study of professional education is being explored through three approaches.

A *first* approach is being tried with sophomores, jointly selected by the School of Education and the Department of English. These students are not in the group selected as project interns as indi-

cated above under "Student Selection." They may be classified as participants in the "on-going," regular program, for prospective teachers of English.

Because of their high academic standing and/or their presence in an English honors program, they are permitted to meet the 8-hour New York State block of foundation courses by means of independent study and seminars. Each student is given an extensive list of readings in educational philosophy and psychology to read over the summer period. They are further required to prepare a paper of interest to them and as suggested by the readings.

During the fall semester of their junior year, the students meet in seminars. Each student presents his paper to the group for comment and counsel. Four professors representing the philosophy, psychology, educational philosophy, and educational psychology departments are in attendance. Concurrently with these seminars the students are asked to do further reading as may be appropriate to individual and group interests and needs. The stimulation from the standpoint of four disciplines leads in many directions.

Twelve students were registered in the program during 1962-63 and 17 during 1963-64.

The *second* approach to independent study of professional education involves all project students selected for eventual teaching internship. Independent study is arranged for the duration each student is registered, whether for 1, 2, or 3 years. Through agreement with university officials, the credit for the 8-hour block of foundation studies in educational philosophy and psychology is delayed until the last semester of the senior or graduate year, or as appropriate to the student's interests. No consideration or penalty is made or assigned by these officials when there is a possible hour-credit overload occurring within a particular semester.

An extensive list of readings in both areas is given to each student. Certain readings are required; others are suggested. To some degree students are encouraged to follow their own interests. Weekly individual conferences are arranged with the two professors representing educational philosophy and educational psychology. During these conferences the progress and understanding of each student is examined and wherever possible the study of foundations of education is related to the many facets of the total project program and teaching in general.

The *third* approach in the Cornell program is being tried in the teaching fields of agricultural and home economics education.

During the first year and as an initial step, a job analysis of the role of the agriculture teacher was completed in the field of

agricultural education. Following this achievement and as a basis for independent study, 38 units which include appropriate suggested activities and readings were developed. The arrangement of the units was made in order that the students would be provided with possibilities for independent action and study before, during, and after internship. Portions of the units were then adapted into programed instruction.

Home Economics education has translated its second required methods course into independent study; the first methods course is introductory in nature and the second methods course is offered concurrently with student teaching. The field has developed its own form of programed instruction to implement independent study.

September Experience, Independent Study, and Seminars

Related to the second approach is the September Experience. Each student interning during the school year is required to spend two weeks at the school where he is to teach, beginning at the time the institution first opens. He is given an eight-page directive which carefully delineates his activities and observations. He is asked to perform many tasks, such as interviewing, observing, riding on a school bus during one of its daily operations, following a pupil through a complete day of classes, and reading selections from two books—*The Discovery of Teaching*, by Brembeck, and *Perspective on Teaching*, by Thomas and others.

A written report on the September Experience is required. During the fall semester the students meet in "pro-seminars" (before teaching) to discuss these experiences with the two professors representing educational philosophy and psychology.

"Concurrent seminars" (during teaching) for these students take place at the teaching centers or on the Cornell campus and are further efforts toward making the educational foundations study more meaningful in terms of actual teaching experience.

Library Facilities and Use

In both approaches to the study of the educational foundations, extensive reading is encouraged. Reading from a wide range of sources is required for some students and suggested for others.

In the first approach students read large sections of 12 books during the summer. These are for the most part original works of outstanding thinkers. Included in the lists are the writings of past and present theoreticians such as Plato's *Republic* and

Dewey's *Democracy and Education*. Several modern texts are added specifically for educational psychology.

The students are encouraged to purchase several of the books. Other writings are borrowed from the project library. Still other works are common enough to be suggested as being available in home libraries during the summer period.

In the fall semester the students are given further lists of books. These are easily obtained from the major libraries on the campus or may be purchased from the campus bookstore.

In the second approach, students are able to secure the books needed for independent study from either the project, departmental, or university libraries. Sufficient copies of required readings are on hand to meet the needs of all project students. Special reading interests are met through the offerings of Cornell's massive library facilities. Inasmuch as students operate "under their own steam," different rates of reading accomplishment exist. As a consequence no one book serves the needs and interests of all the students at the same time.

Quantitatively the range and variety of reading are more extensive in independent study of educational philosophy than in educational psychology. The differences are to be found in emphasis. Programed instruction in educational psychology is being attempted as a means of relaxing the inflexibility of the usual class structure. One of the basic texts in this discipline has been reworked into an adjunct program. Study of the text is followed by referral to the appropriate chapter in the adjunct program, including review, overlearning, and self-diagnosis aspects.

Occasionally the student has difficulty with some section of the program. It is then that he arranges for a special tutorial session. Concurrently with the basic text and its adjunct program there are other reading assignments required in educational psychology. These readings are not as numerous as those in educational philosophy but require the use of libraries and tutorial session.

In general, breadth and depth of reading are accented in the project. The required readings plus readings for special interest produce considerable use of library facilities. In addition, dependence is not made on one or two sources but on many sources, a result of the accent on original rather than secondary and summary sources.

Summary

The past two years were the first of actual project operation. It is probably too early to establish any more than general impres-

sions of the workings and worth of the various approaches to independent study in professional education that are being tested through the project on the Cornell campus.

At this point, it appears that the superior student is influenced and challenged through individual study and individual conference to read more carefully for greater understanding. The individual conference as related to independent study furnishes opportunity for the student to assess his knowledge through critical examination with professors. He is forced to provide more than a surface approach to his thinking. As he discusses and analyzes the readings, completed in private, he is constantly encouraged to relate theory with practice. A sense of importance, reality, and meaningfulness is the result. Development of new insights and interests follow.

There is no doubt that the independent study and individual conference approach of the project helps to counter the often heard criticism concerning the triviality of professional education courses. Significant ideas in education become real. Original works and legitimate research in the field become important. The superior student is challenged to see his reading in the perspective of present day teaching and the existing school situation. He is challenged because the selection of reading material has been made in part according to his own terms, according to his native ability, and in line with his interests.

Observation of the students with superior ability in the project prompts an acknowledgement that independent study and honors work does not immediately become effective. There is a period at the beginning when the student is subject to doubt and perplexity. As effected by continuous work, study, and conference, this initial difficulty is quickly overcome for some, more slowly for others.

Those students who have had previous experience with independent study and honors programs appear to respond and adjust more readily to the similar aspects of the project. Of course, this might be expected. Independent study with tutorial conference is not the same as traditional classroom study. The techniques and motivations differ. A student is required to use greater amounts of his own initiative and resource in independent study than in the regularly scheduled and formalized classroom. He is also forced to think more deeply and with greater concern when engaged in tutorial conference.

In the project there is a certain amount of *esprit de corps*. This is an honors program and the sense of one's being permitted to participate as an honors student appears to be appreciated. At the same time, group identification has become a difficult problem to

solve because of the infrequency of group meetings and lack of student-to-student contact. To meet this problem, *ad hoc* discussion groups are being encouraged wherein students may meet each other more often and identify themselves with the total project effort.

A problem closely associated with the matter of identification with the group exists in the factor of drift. As reported particularly by professors in the foundation studies, the lack of immediate and day-to-day responsibility and contact with the staff concerned produces disorganization in independent study with a few of the students. By and large, this is not a difficulty of the majority of project participants. Most of the students appear to be quite capable of arranging their independent study and are showing more than satisfactory progress under tutorial direction. On the other hand, it is in the interest of the project to develop the habit of continuous and steady study among all the students. Hence, special attention is given to means by which the occasional errant and not so persevering student in the project may be induced to keep on a continuum of effort and direction.

This review is not presented as an implication that all the project problems have been recognized and related, nor that acceptable answers in each case have been obtained. The processes of independent study and tutorial conference are being modified in part as need indicates necessity for change.

Comparisons of the project program with the conventional programs are underway at Cornell. Case studies, extended research, and follow-up evaluations designed to aid in the assessment of the experimental aspects will continue until the end of the project, in 1966, and probably beyond this date.

SELF-DIRECTED STUDENT GROUPS AND COLLEGE LEARNING

Leslie R. Beach*

A FORM OF INDEPENDENT STUDY in higher education which digresses slightly from the prototype is the instructorless small student group, or what investigators at the University of Colorado have referred to as the self-directed study group. The general picture presented by this form of independent study is that of a small group of college students, usually five or six, meeting together periodically and quite informally to discuss subject matter in a course which may be structured and outlined to a greater or lesser degree. To be considered instructorless or self-directed, the situation needs to be one in which there is a very limited contact, if any at all, with the instructor of the course. It is understood that the general course of study or the body of material to which the group is to be exposed is outlined in some sort of course syllabus and includes a textbook or specified reading material.

A recent check through the literature on experimental approaches to college and university instruction reveals that very little is being done with this approach to learning in higher education circles. Despite the fact that educators, social psychologists, and group dynamicists in particular, have been pointing out for some time that growth and learning (defined as a process resulting in changed behavior) are greatly enhanced and made more permanent through group interaction, little use is made of this knowledge in the higher echelons of American education. Actually, a number of studies have generally explored the benefits accruing from group-discussion as opposed to formalized lecture instruction,¹ but not in self-directed group study.

Students Can Learn From Each Other

In a recent human growth and development conference held at Findlay College (Ohio), Dr. Gertho Morgan, Director of the In-

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¹ R. Birney and W. J. McKeachie, "The Teaching of Psychology: a Survey of Research Since 1942." *Psychological Bulletin*, Vol. 51 (1955), p. 51-68.

stitute for Child Study at the University of Maryland, declared the pressing need today is to give more attention to the way *individuals learn in groups*. Said Dr. Morgan: "I want to know more about how children learn *from each other*."² And a number of studies such as that reported by Patton³ have supported the hypothesis that college students derive more from their learning experiences when they have an active part in the total procedure of the instructional situation and assume responsibility for learning. Patton found, for example, that where students assumed responsibility for classroom experience (reading to be done, class procedure, written work, and method of grading), as compared with a control group, they felt that the course was more valuable and they showed greater interest in the course content. Moreover, the degree to which the student accepted responsibility was positively correlated with gain in knowledge of the subject matter and gain in ability to apply the principles studied.

Such findings, coupled with the research on group discussion as an effective instructional method and the group dynamics research on the productivity and behavior change in participative groups, have served to stimulate the interest of this writer in the possible applications of these principles to college-level learning. Because of the paucity of published reports of experimentation and innovation along these lines, this report will deal primarily with the experimental work of the author and secondarily with one other study which has appeared in the literature.⁴ To provide framework for what is to follow, it might be well to mention the particular interests of the author which lead to study in this area. Of special interest have been such variables in learning as the degree of student interaction in study and learning, the extent of student-teacher contact, and the personality of the learner as related to his performance in various types of learning situations. By performance is meant not merely achievement in the course as measured on the class tests but total performance including other desirable outcomes of a learning experience, such as outside material read in conjunction with the course, quantity and quality of study invested in the course, satisfaction gleaned from the

² Tri-College Human Development Conference, Findlay College, Findlay, Ohio, October 18-19, 1963.

³ Joseph A. Patton. "A Study of the Effects of Student Acceptance of Responsibility and Motivation on Course Behavior." Doctor's thesis. Ann Arbor, Michigan, 1955. Abstract: *Dissertation Abstracts* 15:637-38, No. 4, 1955.

⁴ Following the preparation of this article, the author came across a report of the recent work of Dr. Clarence Leuba, Antioch College, *Improving College and University Teaching*, 1964, Vol. 12, No. 1. [See also *Student-Led Discussion Groups*, by Dr. Leuba, on pages 60-67 of this publication.]

learning experience, stimulation of critical thinking, and actuation of further learning by the current course of study.

Experimentation With the Instructorless or Self-Directed Student Group

Specific interest in the experimental use of an instructorless small study group sprang from the findings of a study at the University of Michigan in which the members of small independent study groups achieved highly on course examinations and in which the more sociable student showed higher achievement than the less sociable student.⁵

Two follow-up studies have been conducted at Whitworth College (Spokane, Washington) employing self-directed student groups in an undergraduate social psychology course. The data from the first experiment have been analyzed and the results of that study are presented here. The findings of the second study appear to be substantially the same.

In the first study all 51 students enrolled in this sophomore-junior level course were randomly divided into two groups. The experimental group was divided further, at random, into small groups of five who attended no scheduled class meetings throughout the semester but met at least once a week in their small groups to study and discuss course materials. Individual post-meeting reaction reports, submitted after each meeting, provided a running account of the reactions of experimental group members and permitted a continuous check on attendance at the small group meetings. These students met with the instructor of the course on a voluntary basis once every three weeks to discuss course materials or any problems related to the course. The control group met in conventional lecture-discussion classroom manner three times weekly, considering the same material covered by the experimental group as outlined in the course syllabus. Periodic written assignments were required of both groups and both took pre- and post-course tests of achievement.

Achievement of the two groups was studied, as were several "other outcomes" of the total learning experience. Analysis of the relationship between the personality variable, sociability, and performance in the two learning situations showed that the more sociable person performed better in the interactive small group,

⁵ Leslie R. Beach. "Sociability and Academic Achievement in Various Types of Learning Situations." *Journal of Educational Psychology*, Vol. 51, No. 4, p. 208-212.

but differences found did not reach a level of statistical significance.

As had been hypothesized, no significant difference in achievement was found between the groups. The experimental group (small self-directed study groups) averaged slightly higher in achievement than the control (classroom) group.

Analyses of the findings on "other desirable outcomes" of the course experience showed that the experimental group outperformed the classroom group at several points. Significant differences favoring the experimental group appeared in quantity and quality of study for the course [$t = 1.64$, $p < .05$ (one-tailed)], amount of reading done in conjunction with the course—both required ($t = 2.21$, $p < .05$) and nonrequired ($t = 3.18$, $p < .01$)—and works consulted in writing papers for the course [$t = 1.98$, $p < .05$ (one-tailed)]. Differences in ratings on the value of the course and in amount of "general reading" done related to subjects included in this course favored the experimental group, but these differences did not reach the .05 level of confidence.

All the small groups met more than the required once a week; and experimental group members indicated that they would study more, do more outside reading, and do more thorough outlining and systematic coverage of the materials if they had it to do over. While these experimental group members were not uniformly enthusiastic about the self-directed study experience, in giving their general reaction to the experience, 14 of the 25 checked "very favorable" or "favorable" and only 5 checked "somewhat unfavorable" or "very unfavorable." Whereas, at the beginning of the experiment only 8 of the 25 checked a preference for the instructorless small group experience over the classroom experience, at the end of the course 14 of the 25 indicated a preference for the small-group learning experience.

Student reactions to this novel experience in self-directed group study varied. The following are typical responses to the question: "What is your *general reaction* to your experience in *this* course?"

I guess I enjoyed the attention I received from being a minority—but I feel that I did receive almost as much from my group as I would have from class. I enjoyed the idea of not meeting as a "classroom group."

* * *

Enjoyed the independence this group has offered and feel a little privileged in being in such an experiment. Just being in this study has increased my interest in research material. My reaction would have been more favorable had I had more experience with this type of study.

* * *

I am an adventurous soul and enjoyed the new experience; however, I feel concrete learning would have been better under a classroom situa-

tion or under the direction of one knowing more of the background, purposes, etc., of social psychology.

* * *

Discussions were interesting in terms of personal experiences and feelings on many topics. As far as book content and importance, often felt we weren't sure of covering important parts; however, we seemed to have hit them as far as final questions indicated.

In an attempt to find more specifically just what in the experience appealed to the students in the experimental group, the following question was asked: "What did you like *most* about this kind of learning situation and experience?" Some responses were as follows:

A much more relaxed experience. Very informal talk-it-over sessions. Got to know individuals personally. Heard more personal experiences.

* * *

The freedom and responsibility of being more on my own.

* * *

I learned to study and reason things out better for myself without waiting for an instructor's answer. I thought this was good as this way you don't rely on the instructor.

* * *

Independence. If we are to act as adults we should be treated as such and this type of learning experience "seems adult."

* * *

I like to work in small groups rather than large. I enjoy working with a minimum of authoritative direction. I desire to work at "my own speed."

* * *

The informality of our discussions, I felt, let us deal with any aspect of a topic that was bothering us, whereas we might be reluctant to mention it in a more formal setting.

Rounding out the picture of student reaction to the experimental treatment, the following are representative responses to the question: "What did you like *least* about this kind of learning situation and experience?"

Hard to begin. Very difficult to decipher what was relevant and what was not. Book hard to understand. Unable to ask questions of someone who could answer them.

* * *

I had to discipline myself more. This was probably good for me, but I would rather receive more outside motivation. Aside from my dislike of it, I think it was good for me.

* * *

I felt lost . . . as I'm not used to this even after 4 years of college. Grades count too heavily in the schools.

* * *

Probably the lack of definite direction that tended to leave us unsure of our standing in acquiring the material expected and our grade standing.

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These latter responses are what might be predicted as response to this type of unstructured college learning experience, but evidently some felt that even those aspects of the experience which they did not like might have been of some benefit to them. It should be pointed out that the textbook used in this course was one which may have been too difficult for the level of the course. It presented a great deal of material on recent social psychological research and did not have the continuity or "flow" which might have been more suitable in a text for students at this level. Probably special care should be exercised in selecting a textbook to be used in this type of independent study situation.

The significant point of these findings appears to be the fact that the students in the experimental self-directed study groups did not suffer in course content learning from being deprived of the classroom and placed in the interactive, instructorless learning setting. Furthermore, they appear to have profited more in terms of "other desired outcomes" in the course when compared with the classroom group. It is also quite evident that the self-directed student group proved to be a feasible approach to college learning in this course and a method vastly more efficient than conventional classroom procedure in terms of college facilities and instructor time.

Similar results to those found by the author appeared in an experiment reported by Hovey, Gruber, and Terrell.⁶ In an educational psychology class at the University of Colorado these investigators matched a self-directed study group with a lecture group in aptitude. Then the self-directed group was broken into small groups of 5 or 6 students who met in the small groups 2 days a week and with the instructor 1 day a week. The meeting with the instructor was concerned with problems in group functioning and questions on course content.

In this study the self-directed study group was slightly but insignificantly superior to the lecture group in achievement on the final exam and on final course grades. A similar pattern was found on a retention test administered 10 months later. The self-directed study group did a significantly greater amount of "serious reading" to increase their knowledge following the course experience. They suffered no loss in retention, compared with a control lecture group, and also showed small but persistent superiority on indices of curiosity. The practical significance of this last finding is described by Gruber and Weitman as follows:

⁶ D. E. Hovey, H. E. Gruber, and G. Terrell. "Effects of Self-Directed Study on Course Achievement, Retention and Curiosity." *Journal of Educational Research*, Vol. 56, No. 7 (March 1963), p. 346-351.

Surely a major goal of education is to stimulate the student to further pursuit of knowledge on his own initiative, after the compulsions of the classroom are far behind. Curiosity may be said to have a "gatekeeper" function in the educational system: if the system arouses further exploratory or reorganizing behaviors, it may set off a process which is self-sustaining and which may in large part determine the whole character and direction of the individual's future life.⁷

These investigators concluded that placing a major responsibility on the student for his own education has interesting possibilities for developing attitudes toward learning resulting in the student's continuing search for knowledge after the formal classroom experience is over.

Concluding Observations and Implications for Future Study

The studies of the author and of the University of Colorado group seem to indicate clearly that self-directed small group study does not result in any decrement in subject-matter mastery in the college learning experience. However, a number of measurable benefits appear in terms of other desirable outcomes of the overall course experience. Such educational resultants as interest in reading materials related to the course and its assignments, quantity and quality of study invested in the course, sense of independence and responsibility in one's own growth and learning, and lasting curiosity aroused by the learning experience: all appear persistently in favor of the self-directed student groups.

In conclusion it must be emphasized that the theory underlying the use of small self-directed study groups is sound:

- There is active participation and involvement on the part of the learner (active examination of subject matter rather than "passive absorption").
- Learning is based on self-discovery and self-directed inquiry.
- The meaning, the application, and the use of principles and concepts studied are better explored and shared by the learners.
- Learning becomes related to group members' experience and observations.
- Learning and application is at the level of each individual learner, yet there is freedom for individual exploration and enrichment.

⁷ Howard E. Gruber and Morris Weitman. "Self-Directed Study: Experiments in Higher Education." (University of Colorado Behavior Research Laboratory Report No. 19). April 1962, p. 3-8.

- There is greater variety of interpretation of material studied and broader illustration of its relation to life situations.
- Interaction provides opportunity for students to learn from each other.
- Learning progresses, in an overall sense, at the pace desired by the small group.

In a learning situation where the above conditions exist, it might be hypothesized that certain desired educational outcomes can be expected: (1) meaningful generalization and transfer of learning, (2) improvement in the application and use of material learned, (3) increased curiosity and skill in critical thinking, (4) deeper understandings of material explored (while gains in knowledge are as great as or greater than those achieved by other methods), (5) better attitudes toward subject matter and continuing interest therein, and (6) greater satisfaction with the total learning experience. Some of these outcomes have, indeed, been observed in the limited study given to small group learning to date. Some are yet to be investigated.

A rather shocking fact is that some of these are the outcomes which many in higher education claim to be striving for (and even may claim to be achieving) but are not measuring. One of the important results of this kind of research and experimentation will be attempts to measure more systematically the "other educational outcomes" for which we are striving besides mere achievement in subject content. There is also a great deal of room for the further study of personality variables as they relate to student performance and learning in various learning situations.

STUDENT-LED DISCUSSION GROUPS

Clarence Leuba*

FOR MANY YEARS, Antioch College has sought to discover ways by which it might further the student's ability to learn on his own. It has tried to develop student independence in learning in several ways: through seminars and tutorial-type teaching relationships; through off-campus independent study programs, under which students in consultation with their advisers develop their own course syllabi; through a system of allowing course credits by examination; and through adoption of individual and group independent study procedures as a part of a teacher's regular teaching methods. The results of a series of controlled studies comparing independent study and regular lecture-discussion procedures in teaching are described in *Antioch College Reports*, Number 2. Report Number 5 discusses the use of group procedures in independent study as a major instructional device in helping students achieve responsibility for their own education. This article further describes the rationale for student-led discussion groups, based on the procedures followed in a general education course, Introductory Psychology.

The Instructor's New Role

With the wealth of books, articles, films, tapes, and other sources of information now available, it seems to me that the *main* function of the college professor, as teacher, becomes not one of dispensing knowledge in the classroom but one of motivating, encouraging, and helping the student to make effective use of this cornucopia of knowledge. His most challenging responsibility is that of helping the student learn how to learn. Becoming efficient in the process of learning on one's own is at the heart of the educational process.

The instructor's *main* function does not seem any longer to be that of imparting his knowledge to students by lecturing to them; and I am skeptical about the legitimacy of seeking through "in-

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spirational lectures" to infect students with an instructor's particular enthusiasms. Other sources of motivation, closer to the student's own needs as an individual in his own right, now seem to be at hand.¹

I would suggest that an instructor's main responsibilities might be (1) to present, as in a syllabus, the resources (books, journals, films, recordings, projects) helpful for an understanding of the objectives, methods, and subject matter of an area; and (2) to provide circumstances that will produce interest and skill in learning, both as an individual and as a member of a team of learners. Most students need the experience of attempting to explain their ideas to others and of getting comments from others. In this way they discover the gaps or other inadequacies in their knowledge. It is well known that having to explain one's views to others can serve a uniquely important function in learning.

Furthermore, when students are making educationally valuable responses—as when developing and expressing significant ideas—they should get reasonably prompt reinforcing feedback. On the other hand, when they have strayed off-course, they should experience the inhibiting effects of adversely critical or other unpleasant feedback. They may be subjected to this during discussions with their peers. It is essential, too, that they be subjected at times to quick reactions from the instructor. Most students have much to gain from the stimulation, guidance, and feedback provided by interaction both with their peers and with the instructor.

Some Prerequisites for Successful Student-Led Groups

The educational value of discussion is generally recognized. However, it is my impression that generally the section meetings into which it has become customary to divide large lecture classes for eliciting student discussions have been disappointing, at least from the standpoint of eliciting discussion. They have been too large, too short, too infrequent, and too instructor-dominated.

To provide profitable discussion, student-led groups should be small enough to give ample opportunity for participation, yet large enough to provide a variety of backgrounds, interests, and points of view. Such groups, with possibly six to eight members, can meet twice weekly for 1½-hour sessions.

There are, of course, dangers in small, student-led discussion groups. Students can fail to prepare themselves, to formulate

¹ I am not suggesting that college teachers stop all lecturing, but that lecturing is no longer our main function or even a very significant one.

suitable topics for discussion, or to proceed in an orderly, systematic fashion. Their meetings can degenerate into desultory, meandering conversations. Some members may withdraw into disgusted silence while others elaborate from personal experiences and parade knowledge of irrelevant matters. Anyone who has participated in committee meetings knows only too well what can happen! Nevertheless, the serious discussion of a topic can be very helpful for gaining a balanced, comprehensive understanding of the topic.

The following prerequisites for profitable student-led discussions have become apparent to me after several years' experience with such groups in general psychology:

- (1) Students have to be *motivated* to prepare themselves thoroughly and regularly by a study of the pertinent background from books and other sources provided by the instructor.

- (2) The topics for discussion have to be both pertinent to the course and to the preparation that has been done; but they should also be of the students' own choosing and presented in such a manner as to elicit discussion.

- (3) The student-discussion group leader has to be acceptable to the group—preferably chosen democratically by the group—and must receive training for his job.

- (4) The course instructor has to persuade the students of the value of discussion, even though labeled by some as a “re-hash” of the material they have read.

- (5) The instructor needs to provide a manual on effective small group functioning and, possibly, give a demonstration of such functioning before the class.

- (6) The instructor must keep in close touch with each discussion group (possibly through a brief written report from each group secretary after each meeting), and he must be readily available to any group requiring his help regarding either matters of content or of effective procedure.

All this requires effort on the part of both the instructor and the student. At times students may look back nostalgically just to “soaking up” information from books or lectures. It is true that they are usually eager at first to accept more self-expression, self-direction, and independence, and to accept more responsibility for their own education. But as they discover the work and effort required, they are likely to falter. Some may demand that the in-

structor do what he is presumably paid for, namely, to tell the students in lectures what they are supposed to learn. It is at this point that the instructor has to indicate in detail what is implied by the truism "all education is really self-education." He has to change the average student's conception of how an education is gained and of the possible role of the college instructor in the educational process.

The Problem of Adequate Motivation

Small student-led discussion meetings are valuable only when students prepare themselves carefully and then conduct discussions in a mature, systematic fashion. Something can be accomplished motivationally, of course, by choosing sources of knowledge that are well and interestingly written; but this is not enough.

I turned to the motivations generally known to be present in students—desires to be well liked and popular among their associates, to gain attention, and to win approval and possibly leadership, prestige, and status among peers. Many students also want parental, instructor, and other adult approval for good grades. My problem was how to connect at least some of these motives with a thorough-going preparation for group meetings, in the hope that eventually through this association the tenuous desire for knowledge might become an objective in its own right. If there could be "ego involvement" with the subject matter, the motivational problem might be solved. Therefore, group members were asked periodically to evaluate each other confidentially on the basis both of knowledge shown and of contributions to effective group functioning. These student evaluations were used at the end of the course—together with examinations and projects—to determine the student's grade.

As soon as the students realized that their status *among themselves*—as well as with the instructor—would depend upon their contributions to an understanding of the topics under discussion in their group, the quality and number of such contributions increased.

As students worked together week after week, another motive became apparent: group identification and consequent group pride and loyalty. Students became interested in comparing the performance of their team in discussion with that of other teams. I tried to nurture these motives and to harness them to the task of furthering course objectives.

As most students became increasingly involved in assuming responsibility for their own education, and to some extent for that of their fellow team members, improvement in examination grades became noticeable in spite of a lesser emphasis on grades. Using substantially the same examinations and norms as previously, the number of F's and D's decreased from approximate equality with A's and B's to only a little over half the latter. Further improvement should be possible.

Helping Students to Function Effectively in Groups

Motivation for thorough, regular preparation was the main problem but not the only one. Even well-motivated and well-informed students may not participate in discussions effectively because they lack skill in effective interaction. They may have been accustomed chiefly to recitation, or to question-and-answer periods, or to "bull sessions." Effective development of a topic through discussion is a slowly acquired art. In a "Manual for Student-Led Groups," I suggested the following procedures: listen carefully, restate in your own words what had been said, raise questions when a point was not clearly stated, make thinking more precise through careful definitions of terms and through illustrations, seek implications and applications, see a topic from as many angles as possible, question the reliability of sources of information, summarize periodically, and draw out quiet people. I was amazed at how many students still had to learn such elementary procedures as not to interrupt or not to speak when others were speaking. I was also surprised to discover how difficult it was for the students to determine when diversions from the topic should be discouraged or should be briefly explored as having possible significance. Too rigid control of a discussion could be frustrating and as detrimental as no control.

To secure the adoption of the procedures mentioned in the manual, it sometimes became necessary to offer training periods. This training often included having group members re-state the previous speaker's views and inquire whether the speaker had anything further to add before they stated their own ideas.

I met occasionally with the group leaders to emphasize the functions for which they were responsible and to discuss with them the problems they had encountered. Although they were responsible for the use of effective procedures, it was emphasized that their ultimate objective was to distribute this responsibility as much as possible among the members of the group.

I found that the instructor should furnish suggested discussion

questions for the first few meetings. Furnishing such questions should soon become the students' responsibility. If, however, this responsibility is left equally to all members of the group, each is likely to leave it to the others. Accordingly, in a group of six to eight students, it is wise to have a rotating steering committee of two or three members responsible for discussion topics. Other members may also bring in questions for discussion. The leader's responsibility is then to bring out quickly these topics and questions at the beginning of each meeting and to get group consensus—or at least a group majority—regarding the topics they would prefer to discuss. This is important since groups discuss much more effectively and enthusiastically the topics that they themselves have had a share in choosing.

The manual should indicate not only how to choose significant topics for discussion but also how they should be presented to arouse useful discussion. Merely stating a topic may not be enough. It may be too vague and general to start any discussion. Or, if a discussion does get started, it may go off in many unrelated directions. The questioner should indicate what is already known about the topic from the reading and what specifically he wants to have discussed. Is it clarification of a particular point, disagreement with it, illustrations of it, its implications, its relation to other topics previously discussed?

Two-Way Communication

As the program progressed, it became possible to hold group meetings in a number of small rooms in the same building and to connect those rooms by means of a two-way communication system with a central office, in which I could remain during the meetings. Each of the small rooms was provided with table and chairs as in a typical seminar or conference room. By pressing a button, the students could "buzz" me. By flipping one switch, I could listen to a particular group; by flipping another, I could talk with them.

I soon got into the habit of tuning in briefly on each group, in succession, at the beginning of each class period, listening only long enough to make sure that a group was well started on some reasonably pertinent and useful discussion. In most groups, there was usually a brief friendly warm-up period. Then the leader would ordinarily get things started by calling on the steering committee for the discussion topics they had prepared or a member might indicate some point which he felt needed clarification.

For most of the period, I concentrated on one or two groups that I knew were having trouble developing useful discussions. I might occasionally make suggestions to them, or I might postpone the suggestions in order not to interrupt them. Later, I would drop the leader a note or arrange to see him. If there were a number of matters of general concern, I would arrange for a short meeting of all the team leaders.

Most enlightening to me were the insights I gained into how students learned. In spite of decades of college teaching, in which I had used mainly lectures and instructor-led discussions, I began to realize how little I knew about what and how students learned. I began to understand the laborious, time-consuming processes students had to go through before they could express well-defined and organized ideas in a way meaningful to them.

Although the two-way communication system proved to be helpful, it had one serious and unexpected deficiency. Without being able to see the group members and without knowing them, I was usually unable to identify them by their voices alone and could not get to know the students with the exception of the group leaders whom I met individually and in conferences. This was a serious drawback since I could not readily give individuals appropriate help and understanding or commendations and criticisms. Such immediate feedback seems to be essential for quick, effective learning. A television camera in each room and a screen in the central office might overcome this difficulty. The instructor could then see as well as hear a speaker. Or the central office could be at a hub from which small rooms radiate, with direct vision into each room through one-way vision screens. With such a physical set-up, it should be possible for an experienced instructor to handle a class of at least one hundred, divided into ten or more student-led teams.

How Well Do Students Learn by These Methods?

My interest so far in an overall evaluation of the educational progress made by these groups has been only to make sure that by conventional standards my students were doing at least as well as in conventional courses and that most of them believed that they were making a worthwhile use of their time. This I did by means of the usual examinations and by means of a questionnaire on which students evaluated anonymously the usefulness to them of their group discussions. As mentioned above, a large and increasing majority of the students (two-thirds to four-fifths)

felt that student-led discussions were worthwhile. Other evaluations were made of specific procedures to determine whether they helped attain objectives or whether they should be modified or even abandoned in favor of possibly better ones. In making these evaluations, I used student opinions, as well as my own, and those of other available observers. The time is fast approaching, however, when an overall evaluation should be made of student-led discussion groups.

This process of education through group discussions needs scientific study. We have begun by making tape recordings, sampling group sessions at the beginning, middle, and end of a course. These will be examined to see how progress occurs—what helps and what seems to hinder. This evaluation should reveal not only necessary attitudes and skills, but also the concepts which are particularly difficult to comprehend because of complexity, vagueness of terminology, or other reasons. It may be necessary to prepare additional reading material that develops ideas by small logical steps, testing for comprehension of each step before proceeding to the next one—somewhat similar to a programmed instruction technique.

Important Considerations in Conducting Student-Led Groups

Adequate physical facilities, providing two-way audio-visual communication between the instructor and the student-led groups in properly furnished, small rooms, contribute greatly to the success of discussions in these groups; they may well be essential. In addition, it cannot be over-emphasized that the success of such groups depends on a willingness to make detailed preparations and to help in the development of the necessary student attitudes, motivations, and skills. Finally, the ultimate objective of the program described is the development of the attitudes and skills which would enable students eventually to function more completely on their own in student-led discussion groups, with a minimum of instructor supervision, or possibly with no instructor supervision.

INTRODUCTORY SEMINAR IN AMERICAN GOVERNMENT

Victoria Schuck*

AT MOUNT HOLYOKE, independent study is investigation or work conducted by the student substantially on her own. It ranges from the writing of a research paper for an extra hour of credit in the freshman year to the sophisticated senior honors research project, creative or critical writing. It may be anything from a special reading project concentrating on a particular aspect of a discipline to the writing of a play.

Independent study is gauged by the procedure the student follows, and the independence is a matter of degree rather than a set of absolutes. The procedure requires that a faculty member serve as initial sponsor to launch the project with the student, and that someone—a faculty member of Mount Holyoke or another institution—judge the results. The final judgment must be based on evidence which can be evaluated—a paper, a painting, an oral report, or a written examination. What happens between the start and the conclusion may vary a great deal as for example in the degree of interdependency between the student and the instructor.

Two types of interdependency will serve to illustrate these procedures. In the first, a student who has much competence in a discipline may on her own volition choose the topic for research and a paper as well as the program for completing it. No formal class sessions are involved; the role of the instructor is to serve as guide and critic. In the sciences the amount of supervision often depends on the technical difficulty of the experiment. Where techniques are difficult the student may require considerable help at the outset, and as she acquires techniques, she can continue on her own. But even here she is allowed latitude in seeking out scientific journals for background reading.

In the second type a subject is predetermined by the instructor for a small group of students each of whom develops an individual paper, and all papers contribute to the overall subject. The group

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meets from time to time in seminar sessions, but the student carries on outside the meetings independently. The instructor again serves as consultant on bibliography and the feasibility of the research and judges the paper or report ultimately presented to the group. This second type of independent study is illustrated by the special introductory seminar in American government.

Objectives of the Introductory Seminar in American Government

The introductory seminar in American Government was offered as an experiment of the four colleges in the Connecticut Valley (Amherst, Mount Holyoke, Smith, University of Massachusetts).¹ The proposal came from a small committee of faculty and administrators who "were asked to re-think the assumptions underlying education in the liberal arts and to re-evaluate accepted practices and techniques. . . ." Instead of a curriculum comprised of freshman survey courses followed by advanced seminars, the committee suggested the reverse—large advanced lecture courses (with discussion groups conducted by the student members) and small "freshman seminars" (of no more than 10 or 15 students) designed to initiate the student into self-education. It was assumed that the student "is capable of far more independence than he now demonstrates, but that he must be given proper training and opportunities." Such a freshman seminar would explore a limited subject, the objective being to show students what it means to work as a scholar in a discipline. A seminar of this kind would be a "methods" course to include the "how to" work up a field, define problems and issues, assemble data, formulate hypotheses, and undertake analyses. While imparting some competence in a field the seminar would engage the student in learning independence. In such a procedural study, there could be no escape, one thinks, from learning subject matter in depth if one were to cope with methodology.

After the four colleges had agreed to undertake the experiment, the faculty members of the supervising committee each turned over to the appropriate committee of his own institution the task of fitting the new seminar into the specific college curriculum.

¹ For more details on the proposal and the results see Barber, C. L., Donald Sheehan, Stuart M. Stoke, Shannon McCune. *The New College Plan, A Proposal for a Major Departure in Higher Education*, Amherst, 1958; Barber, C. L. *More Power to Them, A Report of Faculty and Student Experience in the Encouragement of Student Initiative*, Amherst, 1962. The project was assisted by a grant from the Fund for the Advancement of Education of the Ford Foundation.

Description of the Seminar

Although the original concept had been for a freshman seminar, the logistics involved in setting up the course within the Mount Holyoke context made it more adaptable as a sophomore offering. Fourteen sophomores and one freshman took the seminar. The students invited were selected from among the 80 or 90 who had elected the general American Government course and were chosen largely because their course schedules permitted a 2-hour group meeting once a week in the afternoon. The group was not extraordinary either as to college board scores or scholastic averages. For example, most of the students had C or B averages at the end of the freshman year. None had had any previous experience with independent study.

As to the time involved, the instructor taught two courses while directing the seminar. Because Mount Holyoke then had a five-course plan, students at least theoretically spent one-fifth of their time on the seminar (they reported having spent much more).

The course met once a week for two hours during the first half of the semester. These weekly meetings—and they were discussion sessions only—were adjourned during the time that students were writing their final papers except for an hour at mid-point when they came together briefly to compare the problems they were encountering in the research and writing. In the end, there was a final meeting of more than two hours to discuss the papers and to formulate a conclusion on the topic of the seminar to which each paper contributed a single aspect.

The subject of the seminar was the relationship between the President and the Congress, but to give a sharper focus the specific topic was President Eisenhower and the first session of the 86th Congress. This session was selected because it had adjourned only a couple of weeks before the start of the course, and committee hearings, reports, the *Congressional Records* for the session, copies of bills, and White House press releases were available in the library.

The syllabus was designed to present the subject and purposes of the seminar. It listed the principal legislative items of the 86th Congress, 1st Session, and referred to some of the major issues. It also contained a selected bibliography with a wide variety of writings on the presidency and Congress—classics, monographs, newspapers, periodicals, and source materials, as well as some books on writing and style.

About a fourth of the course at the start was spent in discussion of general theory, institutions, and processes of the execu-

tive and lawmakers. Students even read a number of Supreme Court cases on executive and congressional power. The remainder of the time was devoted to study in depth of President Eisenhower and the Congress with many questions in the forefront: for example, What is politics? Where is the locus of power? What is the process of decision-making? What limitations are placed on the exercise of power?

The first and only definite assignment of reading was Drury's fairly recent novel, *Advise and Consent*, ten numbers of the *Federalist Papers*, and selected articles of the federal constitution. After that, assignments were based on subjects to be discussed, questions to be answered, and data to be furnished for proof.

There were no examinations. Students wrote five papers and submitted one "set" of research notes on cards. The first paper was a comparison of the novelist's view of the presidency with that of the authors of the *Federalist Papers*. The next three were brief essays utilizing source materials on elections (1956 and 1958) and the fight over Rule 22 (cloture). They were to serve as preparation for the final and long paper analyzing presidential-congressional strategies in passing or blocking legislation. For the final paper each student chose a particular bill or appointment of President Eisenhower—anything from the farm bill and Hawaiian statehood to labor measures or the Strauss nomination.

The instructor advised students individually on note-taking and research methods, and wrote extensive comments on all papers. The first drafts of the final papers were read and returned to the students for rewriting. All this meant a considerable investment of faculty time.

No special arrangements for this course were made by the college library. No reserve books were set aside in the reading room as is customary in other courses. Yet these students made more extensive and profitable use of the library resources than they had ever made in any other course. They found their way to all kinds of collections in the library stacks and inhabited the document and newspaper floors, usually the rather exclusive domain of upperclassmen.

Evaluation

At the start students were bewildered by the absence of specific reading assignments and frustrated with the length of the bibliography in the syllabus. But in the end they thought the list too limited. It was striking to see how they had gained genuine in-

dependence, how they took no writer's conclusions for granted, and how they established the habit of evaluating sources. Dependence yielded to independence; typical question-and-answer classes became lively and close discussions; time proved insufficient to cover desired argumentation.

Students, the faculty member, and the four-college committee participated in evaluating the seminar and concluded that it had been successful in realizing its objectives. Finally, instructors in the experimental introductory and advanced courses in the four colleges met to discuss the total results and check experiences. It should be noted that no attempt at comparisons with a control group were made since no other class had been taught comparably.

Each student wrote a personal statement (signed or unsigned as she wished), and then the seminar met without the instructor to discuss the procedures. A committee of students prepared a composite evaluation. Without exception they admitted their early frustrations in the opening days and their subsequent genuine enthusiasm in discovering how self-reliant, disciplined, and independent they had become later—even how wistful they were at the thought of returning to traditional procedures.

There is another observation. The level of achievement of the students in the seminar was amazing: no student fell below a B in the course; several achieved B+ and two made A—. Most of them majored in political science; several concentrated in economics or history. In graduate school, one has been elected first woman editor of the law review in the law school she is attending.

Although this experimental course was not continued, a number of its features have become a part of a new introductory course in American Government at Mount Holyoke.

Observations Arising From the Seminar

No course in teaching independence can rely on methodology alone. The character of the limited subject is important; if the topic is intellectually stimulating, almost any amount of tedium will not defeat its purposes. Before a student can undertake independent study without squandering time, he should have some acquaintance with the field in which he is working. Subject matter can be learned in such a seminar. But there is need for time to undo the habit of dependence on the instructor for specific readings. In the case of the special seminar, the instructor could have prevented some of the frustrations by ~~giving~~ ^{providing} more guid-

ance. There is also need for time to write and rewrite, for time to probe into the corners of the subject. All of this adds up to the suggestion that such a freshman seminar would be best offered as a part of the three-course plan or at most a four-course plan.

A group of 12 students would be more desirable; it should never exceed 15. Students need not be scholastically superior. No doubt like the Hawthorne experiment some of the success of this seminar was its uniqueness, but such a course if offered regularly could spark many students to a level of intellectual achievement they had not attained before. And a curriculum with such seminars would offer a break from the typical prep school class procedures too often carried over into college courses.

General Observations

From this course one may conclude that the sooner a student is introduced to independent work the better. He should learn early how to go about it and how to avoid a fearful waste of time. Freshmen can begin independent work in close relationship to a course, as experience at Mount Holyoke noted before suggests. Students with initiative and interest will benefit most. But the experiment with the special seminar would seem to point out that initiative and interest can be aroused by this type of teaching. It cannot be gainsaid that the initial demand on faculty time is heavy, but as work progresses with the same students this demand levels off. In the end both students and faculty become the gainers.

It was agreed at the start that the experiment would be tried for a single year. The announcement of a gift for the new Hampshire College in Amherst, to be sponsored by the four colleges, opens the way for further experimentation in this type of seminar.

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NEW DIMENSIONS in Higher Education

Approach to Teaching

by

WINSLOW R. HATCH

Specialist, Higher Education

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

JOHN W. GARDNER, *Secretary*

Office of Education

HAROLD HOWE II, *Commissioner*

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New Dimensions in Higher Education

THE SERIES "New Dimensions in Higher Education" deals with developments of significance to colleges and universities and is addressed to all persons interested in improving the quality of higher education. Each number is intended, within the bounds of reasonable brevity, to provide the harried reader with a summary and interpretation of a substantial body of information. Background information was obtained from reports of published literature in the field in the Educational Research Information Center (ERIC) and from educators who are recognized authorities in the subjects treated.

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Foreword

WHILE THE AMERICAN COLLEGE STUDENT is probably better housed today than was a college student 50 or even 10 years ago, it is not at all clear that he is better taught. It is disturbing to note the frequency with which administrators observe that they do not know how to recognize good teaching and good teachers. Even more disturbing is the way their audiences nod in assent. Whether the administrator does not know what good teaching is, or does not know who his good teachers are, is not clear. In either event, it is a damaging revelation. Whether the problem is presumed or real, it clearly needs to be examined.

The larger theses the reader might examine are that good learning, and hence good teaching, is identifiable; that this being true, it should be possible to recognize good teachers; that if good teachers are recognizable but go unrewarded, good teaching is honored in the breach.

THOMAS CLEMENS
Officer in Charge
Research Branch

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The Problem

THE THESIS EXAMINED IN THIS STUDY is that the *approach to teaching* should be systematic, critical, and deliberate. The study examines the question raised by thoughtful teachers as to whether they are, in fact, teaching. They could be instructing or informing to a degree that is good neither for them nor their students. Research has demonstrated that students can acquire information as well without the personal intercession of an instructor as they can with it.¹ Since teaching machines appear to inform students as effectively as some instructors do, and since television can inform more students than a teacher can in a conventional classroom situation, professors are bound to wonder about the desirability of teaching that is primarily or even exclusively informational. The question becomes still more pointed when the learning specialist tells us that "the first thing a teacher should know about teaching is to know enough not to teach"² in the sense of informing or telling.

Teaching, as the word is used in this publication, is what is left after a teacher stops transmitting information. It involves the teacher's and the student's examination of the information that the students have acquired, preferably through a substantial effort on their part. There is, of course, little excuse for teachers to be uncertain about their true role because learning specialists have been describing it for years: It is to direct student learning.

What this means should pose no problem because students learn in much the same way as do their teachers. The teacher typically calls his learning *research* or *inquiry*. *Inquiry* would, accordingly, appear to be

¹ The Committee on Utilization of College Teaching Resources, *Better Utilization of College Teaching Resources*. New York: The Fund for the Advancement of Education, May 1959, 63 p.

Allan O. Pfnister, "Review of Research on Class Size," *The Annual Conference on Higher Education*, University of Michigan, Nov. 17-18, 1959, pp. 17-26.

Samuel Baskin, "Quest for Quality," *New Dimensions in Higher Education*, No. 7. Washington: U.S. Government Printing Office, 1962, 18 p.

Thomas S. Parsons, Warren A. Ketcham, and Leslie R. Beach, "Effects of Varying Degrees of Student Interaction and Student-Teacher Contact in College Courses," Ann Arbor, Mich.: School of Education, University of Michigan, 1958, 56 p. (Processed).

Winslow R. Hatch and Ann Bennet, "Independent Study," *New Dimensions in Higher Education*, No. 1. Washington: U.S. Government Printing Office, 1960, 36 p.

² Robert M. Gagné, "Principles of Learning," *Achieve Learning Objectives*. University Park, Pa.: The Pennsylvania State University, 1963. A report of the Summer Institute on Effective Teaching for Young Engineering Teachers, Aug. 25-Sept. 7, 1963, Otis E. Lancaster, Director.

a good word to describe a teacher's teaching and the learning of his students

The problem of providing more good teaching and more good teachers—as defined above—is obviously not going to be met merely by recruiting more instructors (meaning purveyors of information), paying them more, or improving the conditions of their employment. Although these things must also be done, the problem can only be met by preparing more and better *teachers* and converting as many instructors as possible into teachers.

This study, it is hoped, will help teachers to determine whether they are teachers or instructors, or the degree to which they are one or the other. It may also suggest how an instructor may become a teacher, or at least how he may become a teacher for a greater part of the time.

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The Evidence

SINCE THE MEASURE OF TEACHING is the quality and quantity of learning that takes place, any inquiry into teaching must deal with the conditions of learning. It would, of course, be desirable to have a consensus as to what constitutes good learning, a consensus that reflects the judgment of persons who have done research on this subject and are able to appraise the considerable literature that attracts but dismays teachers who lack this competence. Although no consensus was available, it was possible to develop one from the following three papers: "Principles of Learning" by Robert M. Gagné, formerly Professor of Psychology, Princeton University and now with the American Institute of Research; "Conducting Classes To Optimize Learning" by Ralph W. Tyler, Director, Center for Advanced Studies in the Behavioral Sciences, Stanford University; and "Recitation and Discussion" by Wilbert J. McKeachie, Professor of Psychology, University of Michigan.³ The consensus that emerged, quite apart from its substantive merit, is recommended by its brevity, the creditability of its witnesses, and by the fact that it was arrived at independently. The points emphasized by Gagné, Tyler, and McKeachie, stated as succinctly as possible, are:

Good conditions of learning are met when:

- a. "The human learner . . . is made the central part of education as a system." (Gagné)
- b. The learning reflects that which "the learner learns," that is, that which "he is thinking, feeling, or doing." (Tyler)
- c. The learning is "active" rather than "passive." (McKeachie)
- d. "The learning situation encourages 'generalizability,' the learning of principles, as opposed to . . . rote learning." (Gagné)
- e. A "principle" is learned "in a new situation." This helps one to "identify the common element in situations and shortens the learning process." (McKeachie)
- f. A student "explores something new." (Gagné)

³ *Achieve Learning Objectives*, Otis E. Lancaster, editor. University Park, Pa.: Pennsylvania State University, 1963.

- g. "Each new practice requires him to give attention to it because of new elements in it . . . [only so] does it serve adequately as a basis for effective learning." (Tyler)
- h. Importance is attached to "levels of aspiration." (Gagné)
- i. The learner "sets high standards of performance for himself . . . high but attainable." (Tyler)
- j. "We can teach students to enjoy learning." (McKeachie)

Endorsed were:

- a. "Guided discovery." (Gagné)
- b. "Problem-solving." (Tyler)
- c. "Problem-oriented instruction . . . Experience in solving problems within the students' ken is essential." (McKeachie)

The Working Hypotheses

WHAT WOULD A CRITICAL READER or teacher have to do to test the principles and conditions described by Gagné, Tyler, and McKeachie? He would have to examine them, develop working hypotheses, and design an experiment and classroom situation in which all of the hypotheses were tested one by one, and all together. Why all and why all together? Because were just one hypothesis proven untenable, it might affect others and thus invalidate the whole experiment. If one has an equation with many factors in it, he must, if he is to have any confidence in his results, include all factors.

There are, of course, several ways of examining the hypotheses. One could, for example, farm out the experimentation to several individuals. This would not be satisfactory because, as has been noted, the test of any one is affected by the others. One must, rather, try to accommodate all of the hypotheses in an overall experiment. But how? Should every item be examined, each in turn, for its implications for the practicing teacher? No, this would not be very helpful, because the problems met in the classroom do not present themselves one at a time. One might rather approach the experiment as a new course assignment is approached, by asking what the teacher does during the summer or with whatever time for preparation he has? What does he do a week before or the night before the first lecture? What would he do during the first meeting? In the first minute?

Before such a study is attempted, let us examine the circumstances which might cause a teacher to consider a new or experimental approach to his teaching. It might be an administrative request. Under these circumstances, the teacher has little choice. Or it may be that the teacher has had some trouble with his self-respect, from which Galsworthy tells us there is no escape. It may be that nothing very important has happened to the students in his classes. They have gone through the motions, may even have made good grades, but they may not have found the instructor or the subject very exciting. The instructor knows that there is such a thing as intellectual excitement, but his enthusiasm for and commitment to his subject is not caught. The teacher's conclusion may be that there must be a better way than that which he has employed; that if there is not, there must be a better way of making a living

than by teaching. He may have no idea of what he wants to do, except that it is different from what he has been doing. Irrespective of his motivation, let us design an experiment and elaborate the test to the point where there can be no question as to its validity.

Implications for Content

What should one teach? Should the instructor take the first hurdle—the first lecture—in a fine burst of speed, and then start talking about motivation, reinforcement, and the other factors that affect teaching? He can hardly do this because he has to teach something, and this must be resolved first. The first question, then, would appear to be, *What* is to be taught?—that which was taught?—that which someone else has taught?—that which the textbook covers?

None of these would seem to be entirely satisfactory. How, then, might the instructor answer this question more satisfactorily, trying always to be critical and hopefully scientific?

It would be helpful if he had criteria as to what should be included and what should be excluded. But where is the instructor to look for such criteria? What about the principles of the subject matter in question? While this raises the question as to what is meant by a principle, and while this is easier for a scientist to answer than for teachers of the social sciences and humanities, it is not easy even for the scientist. He has only to ask his colleagues to find that he is likely to get about as many answers as he has colleagues. What he would like to have are principles about which there is more general agreement and to which there is explicit reference in the literature. These conditions are met in the theories and hypotheses of the subject. Were he to act on this counsel, he would still not be out of the woods, because he still has to decide which principles, which theories, and which hypotheses—for there are always more than one—he can "cover." Why not concentrate on the major ones, the most inclusive ones? Or, working from the other end, why not eliminate those that are most expendable?

The next step is easier: to settle upon that which constitutes the minimal number of facts which are required to discover the principle. In addition to the advantages in discovery extolled by Jerome Bruner and Gagné, this approach has the advantage that it requires more facts than the ones students are usually expected to acquire.

Once the above problems have been resolved, the instructor can plan the course so that the factual material needed is examined in appropriate lectures and conferences and put to use in the laboratory. The technique of shifting the contexts in which the material is discussed is, of course, a useful one.

Now that the *what* has been disposed of, one can examine the problem of *how* to improve the teaching.

Implications for Method

How should one teach? Any teacher can make these determinations for himself; but before he would be able to examine all the implications in the conditions of learning treated herein, he would have to give more time to it than may be available to him. Since it takes no great mental acuity to do this—the major problem being time—let us examine an experiment that fits and orders the evident pieces and tests the several hypotheses, being concerned only with traditional operations—lectures, laboratories, conferences, and examinations.

Since Gagné finds guided discovery to be an effective learning device, and since Tyler and McKeachie recommend problem-oriented approaches to teaching, methods in which discovery or inquiry is accommodated should be exploited.

If the implications in the conditions of learning are to be identified and tested in any complete fashion, one needs to examine them first for his lectures and then for the laboratories, conferences, and examinations.

The Lecture—A lecturer cannot employ the same kind of presentation day after day and meet the requirements of the subject or of the students. It can be expository under some conditions; it should never be expository under others. Before the lecturer finally decides what he proposes to do, he should examine the uses to which lectures are put. Of the expository lecture one must ask whether its general use is justifiable when teachers are in short supply but books, mimeographed materials, teaching tapes and film can be mass-produced.

Even when lectures *illuminate* rather than *follow* a textbook, one must ask whether the material might not be *better* illuminated for the students by getting them to intend their minds upon it.

Lectures are also used, on occasion, to describe the method appropriate to the discipline in question. These lectures may be on the scientific method, the historical method, the art of good writing, or on how to study—or even on how to study independently. But here, if anything has been learned, it is that one learns a method—not by hearing about it, reading about it, or by talking about it—but by using it. The method in question should be used by the students *and* the instructor, not just during the lecture in which it is described, but throughout the course. Disturbing is the fact that few lecturers use a critical method in discussing it.

Even when lectures are interpretive and the lecturer seeks to show the significance of the material in question, he can fail because that which is important to the lecturer may not appear important to the students because they were not permitted to discover its significance.

One reason for giving so much attention to the lecture is the fact that provision will almost certainly have to be made for more large classes in the future, and that only lectures can be employed under these circumstances. While large class presentations may have to be made, they do not necessarily have to be expository. If 450 students constitute a large class, it has been demonstrated—and over a 10-year period—that conference-like, even Socratic, lectures are practicable and effective. While the expository lecture must sometimes be employed because students are so indifferent or capable only of listening and of regurgitating, nothing is better contrived to perpetuate indifferent scholarship than the expository lecture.

The vehicle most frequently used in televised presentations is the expository lecture. The justification given is that it makes good teachers and good teaching go farther. A disturbing aspect of the use of such lectures is that they may be an excuse for not doing something better but more difficult, namely, to examine the materials under discussion and to provoke discovery or inquiry.

If it is assumed that a Socratic lecture, for example, is dislocated and aimless, hence unsatisfactory, the assumption should be reexamined because a good Socratic lecture is tightly organized and is efficient as well as effective. Neither is it lacking in drama. Actually, it has more of this quality than the expository lecture, because it involves the listener and hence exploits the essence of good "showmanship." Finally, the Socratic lecture has spontaneity and carries conviction because of its spontaneity.

In his preparation, the lecturer will assemble the facts bearing on several alternative presentations and weigh their advantages. He will, however, take his lead from the students, when practicable, by beginning his lecture with a carefully framed question. He does this, in part, because he wants to involve his students even in his lecturing. Of the different ways of developing the lecture, the best one is usually the one that the students suggest by their answers. Their responses often have to be rephrased because they concern material too involved for them, or unavailable to them, or they require equipment or skills they do not have.

Some of the questions the lecturer asks himself in planning his lectures are: (1) What facts can the students get in sources available to them? (2) What additional facts will have to be supplied if the students are to have all they need? (3) What role does the teacher want his students to play in the lecture? Are they to be merely "note-takers"? If so, all that the teacher is likely to see of them is the tops of their heads. If the students are provided with transcripts of the lectures, they do not need to take so many notes.

Rather than to encourage note-taking, the lecturer may want the students to think along with him. By pressing them to the point where they ask questions he can often involve them from the opening moments. When sufficient interest forms about one of the student's questions, the lecturer can build it into a problem that is sufficiently substantial and searching enough to sustain the students' interest for the whole lecture, or for several lectures, or for other class meetings. When this is done, the students may be persuaded that the original interest in the subject was theirs and that the choice of the problem was theirs. In examining the problem with the students, the lecturer tries to get them to suggest how the problem might best be attacked. Later when the students are asked to volunteer whatever facts they have gleaned, they may—if their contribution is substantial—conclude, and properly so, that theirs was a substantial contribution to the lecture. If the lecturer is interested in how his students think, his interest will show through and his students will think along with him. They may even follow along closely enough to interrupt him when they lose the direction of the argument or catch him in some irrelevancy.

The best questions raised by the students are likely to be very conspicuous. To have asked them, and to have had them recognized as perceptive, flatters and involves the questioner. Such recognition gives other students a mark to shoot at, and often a disposition to shoot at it because they, too, would like to bask in the high opinion of the teacher and their fellow students. A course taught in this way has a quality and tone that flatters students because it is thoughtful and hence worthy of the best efforts of men and women in an institution of higher learning.

If a critical examination of facts or postulates is brought off in the lecture, students can be counted upon to be attentive. Finally, when the students discover that the most expeditious way of studying for the course is to take their cues from the lecture—both as to the material that is relevant and the method that needs to be used—they will be attentive.

Before the lecturer finally faces his students, he will want to think long and hard about the language, the metaphors, and the illustrations he proposes to use to give his lecture bite and thrust.

One thing the good lecturer will discard is the conceit that he is going to "instruct" his listeners. If he is wise or experienced, he will know that the best he can do is to create the conditions under which his students will *want* to learn and *will* learn.

In the *first lecture* one has an opportunity he never has again to put first things first. These first things are the basic ideas or principles that animate the course. The lecturer will not, of course, identify these principles in advance or by name. He will, rather, identify and describe the phenomenon in question and then literally step back and ask the

students whether they can think of anything more important, more interesting, or more appropriate for them to study. If they can come up with nothing better, his next question might well be: How would you propose to learn more about the matter, learn it well, learn it quickly, and perhaps, find a satisfactory explanation or explanations? More than this, they will learn whether they have one of the essential attributes of educated men, namely, the ability to ask the right question. Finally, the students will discover one of the basic reasons that brought them to the course and to an institution of higher learning.

The students' questions can be counted upon to prompt the observation that there appears to be a basic problem in the phenomenon under discussion and that it would be interesting, perhaps profitable, if the class were to consider it. The class may have trouble stating the problem well, but with a prod here and a shove there, an adequate statement can usually be developed by the students. Thus, without knowing it, the students learn how necessary and how natural it is to identify problems.

The degree to which this procedure exploits the task set is very great. Actually, one could ask how this principle might be applied more effectively. One way to exploit the task set and to dramatize it is to write the problem on the blackboard, and to write it on the board at the opening of every lecture, laboratory, and discussion until the problem has been resolved.

The students will soon be wanting some answers, but they must learn to make haste slowly and to discover how essential and expeditious it is to analyze a problem before diving into it. The need to break the problem down into manageable parts and to attack that which is the most manageable is something they are quite capable of discovering.

Students are sometimes astounded (and greatly relieved) to discover that they can determine what it is they are looking for before they start looking - that they can determine what facts are relevant. They can also discover where and how to look for them. In the process of looking, they learn a lot about indices, glossaries, and reference sources and methods. Generally, it is better to let students *discover* this than to *instruct* them in reference techniques. When the students discover that which is relevant to the problem, the lecturer can afford to terminate the lecture. The more abruptly he does it, the better, because it emphasizes the fact that it is the student's responsibility to dig out routine facts.

Students learn a lot on their first solo flight in their efforts at independent study-- a lot more than facts. Some learn that they cannot manage such study, that they are not sufficiently disciplined. Some read masses of material rather than scan it, or they memorize it rather than

think about it. Some come to the next lecture, hurt and baffled. Some are resentful. This is where the teacher with little faith in himself or his students "blows" the course. Caving in before student pressures, he starts spoon-feeding and attempts the impossible, namely, to do the students' thinking for them. If, instead, he moves serenely ahead, he makes the transition from instructor to teacher.

This approach has the advantage that in assuming a maturity and a disposition to learn—even an ability to learn—it is difficult for students to act irresponsibly. But how, in courses where this approach has been used successfully, are students induced or forced to dig out their own facts? By not giving them the facts, either in lecture, discussion, laboratory, or in answers to direct questions. If they cannot get their facts this way, students will of necessity study the material or look inside a book.

Another way to insure that the students will come to class prepared is to assume this preparation and to plan the next lecture, laboratory, or conference as though this were the case. When students discover that the lapse of just one evening's study wastes their time because they cannot understand what goes on in subsequent meetings, they tend to come prepared. Group psychology can also be exploited. If a student finds himself missing the point and missing the satisfactions his fellow students register, he is likely to mend his ways.

There are several reasons for having the student dig out his own facts. By learning how to use a library, he frees himself from the tyranny of authority—the tyranny of the lecturer, the laboratory, and the textbook; and he actually learns more because he forces the professor to add facts that deepen and broaden his study. When students play this role and play it responsibly, the teacher is better able to apply his scholarship. It is also good for a teacher's self-respect.

While the students are busying themselves trying to anticipate the next lecture, what is the teacher doing? He is trying to anticipate what the students' requirements will be in the upcoming lecture. Since he cannot do this very well before he steps into the classroom, he is better advised to study the requirements of the problem. What facts does he need to resolve it? What new facts appearing in the current literature and not likely to be picked up by students should be presented by him? The subject will, of course, have more appeal if it can be made timely; and, certainly, the nearer the course is brought to the present, the better the student will be able to see the relationship between the artificial situation (the classroom) and the real-life situation outside the classroom. Since the present is as close as the teacher can get to the future for which he is preparing his students, he will try to keep up to date.

• • •

One way of handling the lectures in which the students volunteer the facts they have acquired is for the lecturer to assemble on the blackboard (in columns, graphs, or charts) all of the relevant facts the students are able to supply. He then adds his facts. The columns should not be labeled or the coordinates identified. He has a reason for his columns and coordinates, but the students should be given the opportunity of discovering what it is. The lecturer's role is to order the facts so that it is possible for the students to see the associations and relationships that are not immediately apparent. This "chinking" and "charting" is done so that the student has a basis for sound inference. The lecturer can estimate when such a basis has been established because he has determined in advance what facts are essential for the development and testing of a sound hypothesis.

Only by coming prepared to these lectures can the student determine whether he is acquiring some of the answers he needs. The attention shown his contribution by the teacher and his peers reinforces his good intentions. But more than this, and more important than this, is the fact that the student is gratified, not by reason of a correct response that a parrot might make, but by the instructor's assumption that the student has the maturity and the intelligence to hold his own in an inquiry that is real and genuine. If it is contrived, it will fail and deserve to fail.

For a more detailed treatment of the problems met in lecturing and for a demonstration of lectures that exploited the Gagné-Tyler-McKeachie "conditions," an edited transcript of an article, "The Lecture," (which appeared in *Improving College and University Teaching*, Winter 1958 issue), follows.

LECTURE: THE NATURE OF LIFE

One of the wisest men I know once told me that after 30 years of teaching and some 6 or 7 years of retirement, he thought he knew why one goes to college. "One goes to college to learn how to ask questions." How, then, does one learn something about biology? By asking questions. Now about biology, the science of life, what would you like to know?

*"What is life?"*¹

That is a good question, almost too good. While we could engage the subject on a broad front, let us try for something that will be more manageable. Let us separate structure from function and examine these two aspects one at a time.

Were we to do this, our first questions might well be, *Does life have a structure? If it does what is it?* But how does one determine whether life has a structure? To answer these questions one must learn a good deal about the structure of living things. But in doing this, and even in advance, it would expedite our study if we knew what it is in all this structure that is relevant to our problem.

¹ Student responses are quoted in separate, italicized paragraphs.

You know the story of the blind men and the elephant. (Here is read the poem "The Blind Men and the Elephant" by John Godfrey Saxe. Six blind men, approaching the elephant from different directions, felt only parts of the animal. One feeling its side described it "as a wall"; one its tusk, "like a spear"; one its trunk, "like a snake"; one its knee, "like a tree"; one its ear, "very like a fan"; one its tail, "very like a rope.") What does this story suggest as to how we might best proceed?

"We have to have ALL the facts."

All the facts there are on morphology, anatomy, histology, and cytology—that is to say, the structure of better than two million species?

"Oh no. Not in a 1-hour course."

Before we conclude that we do not have enough time, that the problem is too big for us, let us state and restate our problem and see if we cannot find some way of determining what structure is relevant to our inquiry. What are we looking for? We will certainly want to know this before we start looking for it.

You say you don't know enough about the structure of living things to do this. You don't know very much, but you know enough. Let us start with some pretty obvious living things—you and me. What is there about us that identifies us as living entities? Do we have something that makes us alive, something that distinguishes us from the steel girder above our heads? Do we have something that that girder lacks? We have appendages, we have arms and legs, we have a head and torso. Yes, and we have organs, stomachs, intestines, hearts, and brains. But how relevant to this study are appendages and organs?

"Not very, because our analysis must include living things—all of them, not just one or some."

Yes, we must keep in mind that there are living things other than ourselves; that there are the other animals and there are the plants. A survey, however, of the animal and plant kingdom, done well, could take a year. Before we abandon our inquiry for lack of time, let us see if we do not have sufficient common knowledge about animals and plants to see us through.

The structure we are looking for must, of necessity, be found not only in the most elaborate of animals, animals like ourselves, but in very small and very different animals. You may not know very much about the protozoa, the smallest animals, but you have at least heard of the *Amoeba*. The *Amoeba* is of microscopic size; is a single cell; is, as we say, unicellular. While you may not recognize it, you have just acquired some useful information. What is it?

"It is that anything as large and as complex as organs is too large for the purpose of this study."

Very good. What about tissues, the component parts of organs? What of the stomach lining, for example? It is not very substantial, to be sure, but it is large enough to be seen by the unaided eye—it is still macroscopic in size. This and other tissues are made up of cells.

Tissues are "out" too, you say, because an amoeba is microscopic and tissues are macroscopic.

The only structures, then, that are common to animals would appear to be—?

"Microscopic in size, or smaller."

Let us examine this suggestion. Let us think about plants and see if we cannot make the little we know work for us. The most elaborate plants have organs: yes, stems, and roots. These organs are composed of tissues. The epidermis of a leaf and the pith in stems and roots are tissue. Plant organs are easily seen by the unaided eye. Tissues can be seen, if not as well, without using a microscope. Plant organs and

tissues are macroscopic. Plant tissues are typically composed of cells, and these cells are microscopic in size, as they are in animals.

Let us also consider some of the smaller entities in the plant kingdom, for example, the unicellular green alga, *Chlamydomonas*. The name of this organism is not a household word, but it is a common enough plant. This whole plant is microscopic in size. From this we can conclude, without opening a book, that we must look for and at structures and entities of microscopic size or smaller, that is, of cells or of living material no larger than cells. How can we afford to say this?

"Cells, or structures of this size, are all that all plants and animals have in common."

On the basis of *your* facts, it would appear that living things have a cellular organization, for they seem to exist as single cells or aggregates of cells. But what are the facts?

There are certain categories of living things which we call slime molds. In most humid forests, if you look closely enough, you will find, scattered over the forest litter, little splotches of yellow or of pink, purple, or pale green material. These splotches are living things. If you were to study them under a microscope, you would find that the thin, wet, and slimy sheets have a structure. They look like old lace with a webbing which is heavier in some places than in others. But look as hard as you will, you will find no compartmentation of the mass. Since some splotches are as large as the palm of your hand, they are large enough to have cells, as we have been using the word—but they don't.

Now, when we find something which does not fit our "scheme of things," what are we going to do about it? Darwin had a good, if jocular, answer—grind it under your feet and forget about it. This is what we have done in biology, more or less, with this type of organism. But we can hardly forget it, because within perhaps 10 feet of the place where the slime mold was found, there may be a little stream. In that stream—growing on old seeds, twigs, or fruits—you might see, if you looked closely, some white, cottony tufts. These plants are water molds. If you were to place one of the white threads under a microscope and were to study it from one end to the other, you would discover that it is not compartmented, but is one long, open tube. It is not cut up into cells, as you would expect.

Finally, let us take a microscopic look at a bit of our own bodies. Even here we are going to make an unusual discovery, for we are going to find that, by weight, less of us is cellular than is noncellular. If you were to take a fiber out of those muscles of yours and were to have a good look at it, you would discover that these so-called striated muscles are made up of long, blunt-ended cylindrical objects not unlike rolled-oats cartons. These cylindrical objects abut on one another. But they are not subdivided into cells. They are large enough to be constructed of cells, but they are not.

If you were to look at heart muscle, you would find that bits of it draw off into fine branches like this (a diagram is drawn on the board) and run into similar branches from other concentrated masses. While these bits of the heart are constricted in these branches, there are no membranes across them. The heart is, apparently, one continuous mass.

When we take all this into account (the structure of the slime molds, water molds, striated and heart muscles), what does it do to the hypothesis we were toying with, that life has a cellular structure? It puts a pretty serious crimp in it. But we have not wasted our time, because we have learned that we not only do not need to study organography, the structure of organs, or histology, the structure of tissues, or even cytology, if by this we mean cellular structures. That structure we are looking for must be found in organs, tissues, and cells. **233**

shows no cellular organization. What is more, we have discovered the approximate dimensions of our structure. It must be :-

"Microscopic or smaller in size; cellular structure won't do"

What might? It's so obvious as to be difficult!

"That 'stuff,' that content of cells and of noncells. It's the only thing left which is common to all living things and to all parts of all living things."

We have a word for it. The "stuff," the living content of living things, is protoplasm.

Now, at least, we know where to look. The structure we are looking for, if there is a structure peculiar to living things, must be found in protoplasm, be it organized in cells or not.

Keeping in mind what we are looking for, that structure associated with living things and all of them, it must be clear that it will not help us at all to study and memorize the structure of a generalized cell. A generalized cell is a biological monstrosity. Generalized animal and plant cells will not, then, advance our study either. Actually, the facts we are looking for cannot be found in any series of types shorter than the one on the board. We need this many illustrations to make certain that the facts are presented in such number and kind that they fairly represent the differences in microscopic structure to be found in living things. We shall, accordingly, have to look at the microscopic structure of man, a vertebrate; the *Amoeba* and *Diplodinium*, protozoans; the apple tree, a flowering plant; *Anthoceros*, a liverwort; the green algae *Chlydomonax*, *Colocochaete*, and *Pantheria*; a blue-green alga or two; the fungus *Allomyces*; several bacteria; a slime mold; the flagellates; and a virus.

It is also our responsibility to assemble *our* facts, both those you can supply and those that are known to me. Our final responsibility is to order our facts so as to improve our chances of making sound generalizations. I will not make them for you because I want you to know the joy of discovery, a satisfaction we professors do not always share with our students. All we are saying is that even in lectures students can make discoveries.

It is now your move. You have some facts; you can dig out others. We shall assemble and order them in subsequent lectures, examine them in discussions, and test our ideas and methods in the laboratory. This is all being done to help you shape some hypotheses, some tentative conclusions about the structure of living things. *Does life have a structure? If so, what is it?* You will need to be critical and you had better be explicit and as complete as possible in developing your proofs. *What is the approximate size of the critical elements, their chemical nature, and how are they organized?*

I will throw questions like this at you until the air is blue with them, but I do not propose to answer them because I do not like to steal from my students. Doing your thinking for you is worse than taking your money because it adds insult to injury.

Now that you know *what* you are looking for you can, and should, start looking, and this as soon as possible. Now that you know *how* to look, I should get out of your way. Beginning now, you are about to come of age; you are about to become a student; and you are about to make this a university, so far at least as you are concerned because for you it becomes a "place of inquiry." Good luck and good hunting. Class dismissed.

(The hypothesis ultimately developed by the students is one known to biologists as the Protein Molecular Network hypothesis. Other explanations or hypotheses will, of course, be advanced and found

wanting. In the framing of this hypothesis, the students will have closed in on the DNA molecule and the newer research on it, which constitutes a veritable biological breakthrough.)

The Laboratory—In a laboratory that is taught scientifically, a manual of instruction is not needed. Actually, the authority implicit in a manual should be avoided. What is required are problems that the students can attack experimentally. Since there are few models, the instructor's ingenuity is taxed. When the method of instruction in a course is problem-oriented, and involves discovery or inquiry, the laboratory becomes very important and becomes experimental. Precisely what does an instructor do in such a laboratory? He announces the problem or problems which have been anticipated in the lecture and will be followed up in the conference. The students are then turned loose to observe, or test, or experiment, depending upon the students' perception of what is required by the problem.

If worksheets are turned in at the end of each laboratory session, they can be used to help the student discover what he can and cannot do, how many ideas are his, how many still belong to the teacher, and how well he thinks. They also enable the instructor to determine how well he is teaching.

The laboratory is anticipated in lecture and in out-of-class study because the students have been advised to get their facts straight before they come to the laboratory, and to think about the problem to the point where they can anticipate some of the analytical skills they will have to use. They have been told that in the laboratory they will have to think in ways analagous to those employed in driving a car; that to get their study in gear they must develop a sense of Problem or *P*; that the next position on the gearshift panel is *A* or Analysis; and the next, *O* or Observation. This latter, the students are told, is the gear they will use most. An explanation of what they observe, however, will require interpretation; and this position on the panel is identified as *H* or Hypothesis. Finally, the students are urged to throw their study into overdrive, into *CH* or Check Hypothesis.

After the problem has been written on the blackboard, the students are "given their heads." Their role is to look at or do whatever their analysis of the problem suggests. When the students have completed their observations or experiments, the instructor characteristically faces them with questions such as, "What were you looking for?" "Why did you do what you did?" If more than one response is made (and more are always sought), the class is asked to evaluate the several alternatives. The last question, usually directed to one of the better students, is, "What leads you to think you made the right observations or got the correct readings?" When the response is that it was "checked," the

class will usually want to know "how?" and the students who understand the problem and have the requisite skills instruct the others. The instructor often anticipates the end of the laboratory by raising a final question, "What bearing does *your* discovery have upon the problem identified in the lecture—the problem we have considered during the past 3 weeks?" In such a laboratory the instructor's role, while not as obtrusive as that of many laboratory assistants, is obviously a significant one.

In advance of the laboratory, the staff prepares a list of questions so pyramided that the student is forced to go deeper and deeper into his problem until he can see some of the implications in his observed facts. In the first laboratory the most important thing the student learns is that, given a problem and materials, he is lost if he does not first analyze it. He has to know what to look for before he starts looking. The analysis expected in the first laboratory is that a category of organisms is identified by whatever the organisms have in common. Since this type of analysis was made in lecture the laboratory is a test of how well the student is able to apply his theoretical knowledge when faced with living things in a real-life situation.

For a more detailed treatment of problems met in laboratory instruction and for a demonstration of how laboratories can be made more experimental, the following edited transcript of the article, "The Laboratory," is offered. This article appeared in the Spring, 1958, issue of *Improving College and University Teaching*.

LABORATORY: GREEN PLANTS

(Materials in this laboratory were arranged on three tables. Table 1 displayed representative flowering plants and parts thereof: Poinsettia for floral bracts; a rosaceous plant for a complete flower; begonias for unisexual flowers; a lilaceous plant; a composite flower; a grass flower; male and female willow catkins, with individual florets under dissecting microscopes; sweet pea flowers, pea pods, and soaked pea seeds; an asparagus plant, essentially leafless; mistletoe, seemingly rootless; duckweed, seemingly stemless; Ricinus; and skunk cabbage seeds. Beside each plant or part, information was sometimes supplied when it seemed necessary. Table 2 contained representative gymnosperms: branches, dissected male and female cones, and soaked pinion pine seeds. Table 3 displayed Psilotum, the ferns and fern allies. Living plants and stages in the life cycle of a fern were assembled here. Again, cards were placed beside the materials when interpretive drawings were required.)

For this laboratory we have assembled on table 1 representative angiosperms; on table 2, representative gymnosperms; and on table 3, representative members of groups we can identify as Psilotum and allies, the ferns and the fern allies. On the small benches at the back and at the side of the room are batteries of dissecting microscopes

and razors. In case you want to make dissections of anything, slides and coverslips have been provided.

9:00 a.m. The initial problem this morning is, What is an angiosperm? That is all, up and at it. You have 20 minutes.

9:20 a.m. Jones, What do you have for us by way of information that might be helpful?

*"Nothing, and frankly, I don't know what you want."*⁵

It is not so much what I want—it is what the problem requires and specifically what this problem requires of you. Smith, what is an angiosperm?

"An angiosperm, I would guess, is any plant that has a flower."

Does anybody have any other answer he would like to volunteer?

"Well, I don't know, but the literal interpretation of the word angiosperm means enclosed seed. How will that do?"

It will do well enough if I did not think you had gotten that answer straight out of the textbook. What do you mean by enclosed seed? What encloses the seed?

9:22 a.m. We want a careful devastatingly complete answer. We want to be really convincing; so let us dig a little deeper. What did you mean, Smith, when you suggested a flower? Why does a flower seem convincing? Take 3 minutes.

9:25 a.m. If you have indicated that flowering plants or angiosperms or any category of things may be identified by what they have in common, this much of your analysis is correct. If you think angiosperms are plants that possess flowers, you can, of course, draw and label the flowers of a willow, or a dandelion, or a poinsettia. If you have not done so, this is the time to do it. Take another 25 minutes.

9:50 a.m. Your drawing should look something like this. Run through these diagrams tonight and make certain you understand what the essential elements in a flower are. Now that you have looked at flowers a little more critically, perhaps you would like to attempt another summary statement.

"While angiosperms have flowers in common, all of the flower that is common is a pistil and/or a stamen or stamens."

If you have the substance of this in your statement--and be sure you have "and/or"—you are in good shape.

But have you asked yourself what a pistil is? A pistil did not just happen one fine morning and march itself in here with a label dangling from it.

10:00 a.m. In the demonstration materials before you are two mutually supporting lines of evidence as to the origin and nature of the pistil. Take 10.

10:10 a.m. What do you have, Brown?

"I haven't got anything."

Sarah, what do you have?

"The pistil in the sweet pea flower under the dissecting microscope looks very much like the pea pod lying beside it. When opened and stretched flat, it looks like a leaf. A pistil may, perhaps, be a modified leaf because the pod has a midrib and veining in it very much like a leaf."

Good girl. If the rest of you have anything like that you are on target. But suppose someone replies, somewhat disrespectfully, "So what?" What is the significance of a pistil? How would you answer this question, Jim?

"Well, it holds the seeds."

But, Sorenson, what is a seed?

"Some seeds have endosperm, but not all. Some have seed coats, but not all. They all seem to have embryos. I would guess that a seed is a structure that possesses an embryo."

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⁵ Student responses are italicized.

Did you follow that? Give it to us again.

Now, what advantage to a plant do you see in its ability to so dispose its seeds? To get at this it might be well for you to compare seeds as you find them in angiosperms with a spore, another reproductive structure. A spore, and its place in the life cycle of a fern, is shown in the fern exhibit on table 3. You have 8 minutes.

LABORATORY: THE LIFE CYCLES OF GREEN PLANTS

Prior to this laboratory a careful study is made of the phenomena involved in a life cycle. This is done in lectures, conferences, and out-of-class study. In an illustration drawn from the fungi, the students are shown how a life cycle can be pieced together from living and preserved materials and from preparations, if one but understands what goes on in a life cycle. The fungus chosen has a very different life cycle from anything discussed up to this point. It is also different from the forms to which the students will be exposed in the laboratory. In sum, the students have to discover these life cycles.

The materials assembled were presented in sufficient detail that the students could construct, illustrate, and label complete life cycles, in this case, of *Polytrichum*, the fern, *Anthoceros*, a liverwort, *Colocephale*, a green alga, and *Phormidium*, a blue-green alga.

A sample of the problems addressed in this laboratory were as follows:

1. Draw the blue-green alga *phormidium* and use whichever of the following seem appropriate as labels: spore, gametophyte, male and female gametangia, male and female gametes, zygote, sporophyte, sporangium.

2. Indicate why you chose the terms you did.

3. Under the words *spore*, *gametophyte*, and so forth, stretched across the top of two sheets of paper, indicate why you think the structure you have drawn is what you represent it to be.

4. Where does meiosis occur in this life cycle?

5. How do you know?

6. Where does karyogamy occur in this life cycle?

7. How do you know?

8. Given stages in the *Colocephale* life cycle, which are identified by letters A to F beside as many microscopes, arrange these letters in a proper sequence to represent a consecutive life cycle.

The Discussion—The purpose of a discussion is to think and to talk as well as one can. This thinking and talking should not take the form of a "lecturette" or of a recitation, neither should it be a drill nor an exercise. It should not be these things because memorizing and parroting someone else's remarks, or making neat responses, does not involve much thinking and hence does not achieve much learning. It should also be kept in mind that there are better ways of answering a question than by giving the student the answer. Finally, it should be observed that the more the discussion leader talks, the less time his students have to talk and, presumably, think. The less they think, the less they learn.



Questioning is an art, a difficult art. It is also a science. If the subject under discussion is to be examined in a critical fashion, the questioning has to be critical. The "question-and-answer technique"—if it means a more or less catch-as-catch-can series of questions, raised by either the students or instructor—has little merit. Nondirective techniques in unskilled hands can all too easily result in street-corner conversations. One is, accordingly, brought to a kind of discussion that is ordered and looks to the resolution of a problem. While it is presumptive to call it Socratic, this at least provides a model and a challenge.

While the original question or questions may cause only one mind to light up, its incandescence often excites and then ignites others. In a Socratic "dialogue" the questions raised and the statements made in answer to them are usually short; so the discussion tends to be smartly paced. It is often difficult, however, to adequately develop and complete a discussion in an hour's time. Rather than to rush the discussion, the generalization that one is unable to reach or develop in a first meeting should be held over.

The liveliest discussions are often those in which the students discover the inadequacy of a generalization or hypothesis to which they were originally attracted. By being alert to the unexpected twist that students give a discussion—to the original, even the irrelevant comment—a teacher can guide without leading. The teacher does not even have to expose the contradictions in, or the inadequacies of, the students' arguments because they are quite capable of doing this themselves. Should the teacher overplay his role, the corrective is ready at hand, for good students resent and resist too much teacher direction. To resist, however, they must supply an alternative; and this, of course, involves them still further, not only in the discussion but also in the course.

The leader who uses a Socratic approach does not abdicate. While considerable store is set by free discussion or undirected teaching in some problem-oriented courses, there is a growing awareness that the teacher has a responsibility for not only the selection of the subject but also the quality of the discussion that results.

In general, the good discussion leader begins his questioning with references to materials and ideas with which the students have some familiarity. To do this he must inform himself about what his students know and what they do not know.

The possibility that some students may get lost at the first turn of the discussion and so be unable to profit from the rest of the conference is real. Provision should accordingly be made for those who are unable to follow the argument. One solution is to invite such students to other

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conferences. After a second or a third conference, they should be able to follow the discussion to its conclusion.

A good discussion leader develops a sensitive ear for the unique contribution. Even the one with little virtue in itself can often be rephrased and used. The leader should be even more attentive to the substantial and original contribution, and should welcome it with obvious appreciation. He has a real ally in the student who resists the direction taken by the discussion. If he can get this student to challenge the logic of the class—even his own logic—it has been made clear that the student's role is important. If he can encourage the students to develop alternative hypotheses, or get them to discover the inadequacies of an hypothesis to which the class has been attracted, he will increase his effectiveness. He need not and should not be obtrusive. While the responsibility for the *strategy* of the discussion is his, he can afford to leave its development, or *tactics*, to the students.

There is, of course, no one right way to achieve a good discussion. The reason for employing Socratic, case, or problem methods is simply that the learning they engender is "self-arousable" (Gagné). While the uninitiated find it difficult to achieve such discussions, they can, with practice, become quite adept. The preparation made by the discussion leader often has as much bearing upon the success of his conferences as anything he does in them. First of all, the discussion should be anticipated in the lecture, the laboratory, and in out-of-class study so that the student has enough information and skills to do what is required of him.

The instructor has another kind of preparation to make. He should try to estimate how the problem appears to the students. He should try to identify the associations they can make and those analyses that should be possible to them. With his opening questions, he can usually determine how accurate his estimate has been, and raise or lower his sights accordingly.

For a more detailed treatment of the problems met in leading a discussion, and for a demonstration of discussions that utilized some of the Gagné-Tyler-McKeachie conditions, the following edited transcript is included. This is a transcript of an article, "The Dialogue," in *Improving College and University Teaching* in the Summer 1958 issue.

CONFERENCE-DISCUSSION-DIALOGUE:

HOW DOES AN APPLE TREE HAPPEN?

When does an apple tree start happening? We have all heard the old saying that great oaks from little acorns grow. We all know what an ~~acorn~~ is, or think we do.

The clear inference, while not entirely correct, is that oaks begin as acorns. But does an oak or apple tree really start happening with the germination of the seed?

"No. *A seed has a history; the embryonic apple tree in the seed has a history; as a matter of fact, the apple tree is well on its way to happening in the seed.*"⁶

Since embryos have a history, the apple tree must have a history that antedates seed germination. When does the embryo begin to happen?

"*In the zygote or fertilized egg.*"

But the *zygote* by its very name suggests that it has a history; there has to be a "yoking" of something. What is it?

"*A yoking or fusion of male and female gametes.*"

But did the apple tree begin to happen with these gametes? One might begin one's account here, but it would be a little odd, and scarcely decent, to leave these gametes hanging in the air. Where, in an apple tree, would you locate a female gamete?

"*In an embryo sac.*"

And where do embryo sacs come from?

"*I don't know where they come from, but embryo sacs can be traced back to megasporoes.*"

Perhaps, then, an apple tree begins to happen with the germination of these spore. Where do male gametes come from?

"*They are found in pollen tubes; pollen tubes come from pollen grains; and pollen grains can be traced back to microspores.*"

There are spores, then, in this, the male line. Where and when do apple trees begin to happen? Not with seed germination, not with the zygote, not with the gametes. It might be . . . ?

"*In spores.*"

An apple tree has spores? Let us stop here for a minute and write some notes to ourselves, so that we can eventually use these instructions as an artist might to piece together the picture of an ancestor of the apple tree that might be found among the first land plants.

Our first note: "The ancestors of apple trees must have possessed spores." But spores germinate to produce . . . ?

"*A thallus of some sort.*"

And what is a thallus? You don't know? Well, an apple tree, as you know it, is a *cormus*. What is the difference between a *cormus* and a *thallus*?

"*An apple tree, a cormus, has stems, roots, and leaves; the thallus of a liverwort, or of a fern, or of an apple tree lacks stems, roots, and leaves.*"

If the thallus of *anthoceros* is large enough to be seen without a microscope, and some thalli may be as big as dinner plates, we can conclude that the thallus of the ancestral plant was probably microscopic in size, perhaps three to four inches in diameter. Let us add this note.

This brings us to a point where we have to ask some really embarrassing questions about the embryo sac. Why do you suppose it has synergids? These two cells serve no function today; they stand beside and arch over the egg, but the egg does not need attendants. After fertilization these synergids break down and disappear. Why do you suppose an embryo sac has synergids? You should be used to this sort of question now.

"*Because apple trees have genes for synergids.*"

And why do they have genes for synergids?

"*Because some ancestor supplied them.*"

⁶ Student responses 243.

Some ancestor of the apple tree like the distant ancestor we are trying to reconstruct? What is a synergid, really? We may get some help in this if we study one of the thalli we have been talking about, the thallus of a liverwort, and elaborate on it. (We go to the blackboard.) Embedded in this thallus is a curious flask-shaped structure with a female gamete nestling in its base. What would you call this structure? If the suffix "angium" means "covering," what would you call it?

"It must be a female gametangium."

Yes, this female gamete is enclosed in, or surrounded by, a female gametangium. In the apple tree the synergids stand on either side of the female gamete and arch over it. It would be permissible, then, to suggest that perhaps the synergids represent a reduced or vestigial . . . what?

"Female gametangium."

Since synergids may be the reduced equivalents of female gametangia, a primitive ancestor of the apple tree may well have had, not synergids, but female gametangia. Let us add another note—"Draw a female gametangium."

Now what about the antipodals? You have memorized their name, but is that all there is to it? If we put antipodals through the "developer" we have used before, the theory of recapitulation, it may give us another clue as to the nature of the ancestral apple tree we are trying to deduce. Apple trees have antipodals; they have genes for them—and they got these genes from some ancestor, perhaps the one we are constructing. But are we necessarily going to draw antipodals in our ancestral plant as three small cells? Before answering this question we should perhaps ask what they could conceivably represent. When the anthoceros spore germinated it formed a thallus, and imbedded in that thallus were female gametangia. We have suggested that we should draw a female gametangium, but are we going to leave that gametangium dangling in the air? If the megaspore germinates to form an egg and synergids, it presumably also forms antipodals; and if the synergids represent a vestigial female gametangium, what is there left for antipodals to be but . . . ? You don't know?

Well, in the liverwort, what did the spore form besides a female gametangium and an egg? What is the tissue in which the gametangia are found? What do you suppose antipodals really are?

"The thallus?"

Yes, they would appear to be reduced or vestigial thallus. We are now able to write another note, "Draw a thallus." If antipodals represent the vestigial thallus of some primitive plant, this thallus presumably should be larger than three cells. Why?

"Vestigial structures, by their very name, are smaller than the original structure."

Perhaps you are a little tired of thinking and would like to draw. So let us go back to the seashore teaching out of that prehistoric sea and draw an ancestral apple tree, following our own directions. It had to have a *spore*; let us draw one. This spore presumably germinated to form a *thallus*; and we were told ourselves to draw a thallus two or three inches long. And there should be, we have said, a female gametangium. Let us draw one. But where shall we put it? Imbed it if you wish.

As you stand off and admire your work, you say this does not look much like an apple tree. It doesn't but let us push on and see what we can discover. What is the generation represented in this primitive plant in which a spore has germinated to form a thallus and gametangia? You don't know? Well, what is the generation represented in the life cycle of the apple tree that begins with a megaspore or microspore and ends with an embryo sac or a pollen grain, with a female gametangium or a male gametangium?

It's the haploid generation."

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Most of an apple tree as you know it is diploid, or stated somewhat more accurately, the thing you have taken to be an apple tree is diploid. Does this plant, this generation, have no history? What about the above-ground part, the shoot? Are we going to write a note to ourselves—"Draw a shoot?" If we do, someone is going to ask, "What is a shoot?" What is it?

"The stem and leaves."

But whoever has to draw our theoretical plant is almost certain to ask: "What kind of leaves shall I draw—leaves like pine needles or like apple tree leaves?" Let's not be too quick with our answers. If ontogeny should repeat phylogeny and you take into account the ontogenetic development of apple leaves, what would it have to be? Leaves are formed on a stem growing point; where cylindrical, bent fingers develop; and only in the later stages do the flat, broad blades appear. Before we had a leaf, or at least before we had anything we would recognize as a leaf, what did we have?

"We had a leaf rudiment, a cylindrical leaf rudiment."

What does a cylindrical structure suggest to you?

"A stem."

In other words, we have a stem-like structure before we have a leaf-like structure. And if ontogeny repeats phylogeny, what might this suggest? It does not prove it, but what does it suggest?

"That perhaps we had stems before we had leaves."

A note for the artist! "Draw a shoot, but remember, no leaves." "But," our artist is almost certain to ask, "What kind of stem do you want? One with a single, unbranched trunk like a palm, or something that branches like an apple tree?" For an answer let us see why we left a question mark standing by the seedling we drew earlier. How does a morning glory seedling get on with the business of forming leaves? The diagrams are on the board. First it produces a horseshoe-shaped leaf, and only later does the oval, pointed leaf that we associate with the morning glory appear. You say, "What bearing does this have on the development of stems? On leaves?" If we had stems before we had leaves, what are leaves?

"Modified stems."

If leaves are modified stems and if we read the ontogeny of morning glory leaves backwards, we observe that the venation or veining of the leaves is dichotomous in the first leaves, monopodial in the later or foliage leaves. What does this suggest as regards the branching of the stem we have to draw. If leaves are modified stems and the venation is dichotomous before it is monopodial, what suggestion would you make to the artist?

"Make the branching dichotomous."

But where are we going to attach this stem to the theoretical plant on the board? For an answer let us review our understanding of the ontogeny of apple trees. The apple tree has its origin in the seedling, the seedling in an embryo, the embryo in a zygote or fertilized egg. Now where do we find these eggs?

"In female gametangia."

Where, then, shall we attach this stem?

"It must grow out of the female gametangium."

You have no way of knowing it, but you are well on your way to discovering how an apple tree happens.

Let us complete our drawing and then compare our theoretical plant with some actual fossil plants believed to be the first land plants. Here is a picture of a Silurian landscape and here are our plants.

"Well, I'll be . . ."

The Examination—The examination at the end of a course, like the tail of a dog, can, and often does, "wag" the course. Certainly for students it is very likely to determine the kind of course that is learned.

While the teacher is usually, and rightly, held accountable for his examinations, his is not always the exclusive responsibility. Sharing the responsibility for many examinations is the institutional grading system. Where this system defines grades in percentages—an A equals 95 to 100 percent, a B equals 85 to 95 percent, and so forth—the faculty and administration have a hand in writing every examination because the teacher is, to all intents and purposes, forced to write examinations in which some 5 to 10 percent of his students can score from 95 to 100 percent on the course and 15 to 20 percent can earn grades of 85 to 95 percent. With such regulations on the books, what does any smart or, for that matter, any conscientious instructor do? He asks questions that 5 to 10 percent of his students can answer with great accuracy and completeness, and that some 15 to 20 percent can answer well enough to miss perfection by no more than 15 percent. Since he cannot risk many really searching questions, the only sensible—and certainly the safest—thing to do is to ask questions on material that can be memorized.

An examination that emphasizes memory is not likely to be challenged by students because they have been memorizing for 12 or more years, have become addicted to it, and see in it their best guarantee of a good grade. Furthermore, were the students to insist upon conformity with the institutional grading system, the administration would have little choice but to enforce it. To expect teachers to endorse practices that raise questions about their own examinations is to expect too much. When you add to these considerations the fact that the memory-emphasis examination is easy to write and is often "objective"—and hence easy to defend—it is rather evident why these examinations are so popular. Finally, teachers, and particularly teachers of lower division courses, are likely to tell you with more truth than ill-grace that their teaching loads do not permit the writing or grading of examinations that reflect a concern for critical thinking and ideas. Then, too, of course, one must protect his time for research. He is naive if he does otherwise.

A memory-emphasis examination, or any examination that does not teach, misses a wonderful opportunity. Actually there are few opportunities as good as the examination for acquiring an overview of a course. An examination that teaches can also be used to help the student and teacher evaluate their performance.

If the examination is used as a teaching device, it should not be a surprise. If the class has been thinking and talking about important

things and the examination deals with them, it will not be a surprise. If, in other meetings of the course, critical methods have been employed, the students should not be surprised if they are asked to employ these methods in an examination.

When at the beginning of a course the instructor states that apart from everything else it is his hope that the class will acquire an "understanding of the principles," a literal-minded student is very likely to assume that the examinations will test his understanding of principles above all else. When he discovers that all that is required is a good vocabulary, a word in this blank, or a check in that bracket, he may lose respect for the examination and its author.

An essay-type question, particularly in the sciences, is a rare experience for teacher and student. It would be helpful if it were not so unique because students will often make the right response in the first sentence, only to demonstrate in the next that they really do not know what they are talking about, that the material just has not been taught or learned. While this discovery is painful for both teacher and student, it is the beginning of wisdom.

One of the awkward things about writing a good examination is that it is impossible to do so unless the instructor has done some hard thinking about his course. The sample, edited examinations provided below are described at greater length in *Improving College and University Teaching*, Autumn 1958 issue, under the title "The Examination."

I. THE FINE POINTS OF BASEBALL: THE WHOLE ANIMAL.

1. All too few baseball fans seem to know what is really happening: when the clutch hitter digs in at the plate. First of all, they don't know what kind of muscles he is using to grasp the bat. In the space below, draw and label such a muscle fiber so that others may begin to learn some of the fine points of the game.

2. How has the mass of this muscle been increased since the days when the best the batter could swing was a rattle? Draw a cell below and show the result of free nuclear division. If a true cell divides, it divides by cell division. In accounting for the development of muscles we make certain assumptions. We say, for example, a striated muscle is noncellular. This brings us indirectly to a problem of definition: What is a cell? Explain what was wrong with the assumption called the Cell Theory, the theory that all living things are composed of cells or exist as single cells.

3. A batter grasps the bat with all five fingers of both hands. The forepaws of most mammals, the flipper of a whale, the wing of a bird, and the limbs of a lizard or a frog have five digits. According to the Taxonomic Theory, why do all of these animals possess five digits?

4. What is there about a man's hand that enables him to get a better grasp on the bat than these other animals could?

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5. The whole business of batting is a matter of muscles pulling on bones. How, in one arm, can the batter have tissues as different as muscle and bone?

6. To the really discerning fan, there is a basic explanation for muscular contraction. What is the ultimate, ultramicroscopic explanation for the ability of a muscle fiber to contract?

7. Most fans don't even seem to know how the blow is delivered. The credit is usually given to "the wrist action," or to "the way the shoulders are put into it." But we know that it is *A.T.P.* that does the trick. What is *A.T.P.*? Where is *A.T.P.* found in the batter? What does *A.T.P.* do for the batter?

8. When he swings, what triggers the *A.T.P.* into action? Where does this substance come from?

9. How does the ballplayer "recharge" his muscles so that he can run to first base?

10. As he races toward first base, what parts of his body are *not* playing baseball? List them.

II. THE WHOLE PLANT

Since a lot of splendid, full-blown language has been used to explain that *understanding* is, we shall eschew the literary and see what we can do with a simple little game called "follow the dots."

Knowledge of a course may look like the diagram on the blackboard, a mass of seemingly unrelated, uninterpreted—and hence *ununderstood*—facts, represented graphically. You could memorize all these facts and objects, but you would not understand an apple tree. What you have to do is to relate them. But how does one do so? First, like a sorting machine, our brain has to pull out the relevant or related facts. Then by induction or deduction we have to interpret these facts. Your answers to questions 1 through 7 are your interpretations, your hypotheses.

1. (Join the dots X, 1, 2, 3)

One cannot appreciate what makes an apple seed a seed without comparing it with other seeds. A skunk cabbage seed is made up of endosperm and embryo but has no seed coat. A corn grain, with fruit coat removed, is composed of seed coat, much endosperm, and embryo; a pinion pine seed has a seed coat, gametophyte or thallus, and embryo.

a. What structure of an apple seed makes it the entity known as a seed?

b. Why did you make the choice you did above?

2. (Join the dots X, 4, 5, 6, and X, 7, 8)

The "brown dust" that falls from a fern sporangium is made up of spores. Seeds and spores germinate to form plants, but there is a fundamental difference in the immediate product of spore and seed germination. Check the correct answer below.

a. Spores germinate to produce a sporophyte (), gametophyte ().

b. Seeds germinate to produce a sporophyte (), gametophyte ().

c. How do you know in *a* above that the plant is a sporophyte or a gametophyte?

d. Now draw such a plant.

e. How do you know in *b* above that the plant is a sporophyte or a gametophyte?

f. Now draw such a plant.

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3. (Join the dots X, 4, 5, 6, and X, 9, 10, and X, 11, 12)

From what you know about flowering plants or ferns, what would you deduce the food source for the developing embryo of conifer seeds to be?

4. (Join the dots X, 13, 14, 15, 16, and X, 17, 18, 19, 20)

One cannot really understand what a seed does for a plant unless one appreciates that a seed is the product of sexual reproduction and understands what sexual reproduction is and what sexual reproduction does for a plant.

- a. What is the *proof* that sexual reproduction involves meiosis and karyogamy?
- b. What is the biological or overall significance of sexual reproduction?

5. (Join the dots X, 23, 24, 25, 26, 27)

In the embryological development of a plant such as the apple tree, the zygote divides in a horizontal plane to form an embryo and a suspensor cell. Then the embryo cell divides in a horizontal plane to form a two-celled embryo, and these two cells in turn divide in horizontal planes to form a four-celled embryo. But now these four cells divide many times in vertical planes to form four multicellular initial layers. What determines the pattern of division in this small embryo? In other words, what determines when cells shall divide and how they shall divide?

6. Why do we think that the first living things were heterotrophic?

7. (Rejoin the dots 28, 29, 30, 31, 32)

The embryo in an apple seed is an apple tree in miniature, and apple trees are related:

- a. to all angiosperms.
☐ What is the evidence of this relationship?
- b. to all seed plants.
☐ What is the evidence of this relationship?
- c. to all archegoniates.
☐ What is the evidence of this relationship?
- d. to the blue-green algae.
☐ What is the evidence of this relationship?
- e. to the *Amoeba*.
☐ What is the evidence of this relationship?
- f. to *Rhynia*.
☐ What is the evidence of this relationship?

In the biology course to which reference has been made in the preceding pages:

1. The enrollment quadrupled even though it had the reputation of being a difficult course.
2. It was regularly audited by Ph.D. candidates in the biological and applied sciences even though it was an introductory course for nonmajors.
3. While it originally had the sympathetic support of but 4 of 20 of the biology faculty, this faculty, almost to a man, later urged

that it be made the introductory course required of majors. A contributing factor was the fact that, while originally for non-majors and while it enrolled but one-third as many students as the combined introductory courses in the professional sequence, is proved to be the best single source of majors.

4. The course was regularly audited by members of the faculty and outside visitors.
5. The content learned increased to the point where twice as much or more information was examined in the latter years than in the initial year.
6. The quality of the learning, as measured by the examinations, improved.
7. When the grades received in this course and in other introductory biology courses were plotted against the presumed potential of the students as measured by their IQ's and their previous academic record, the students in this course tended to realize their potential. In the other introductory courses, potential *A* students settled for *B*'s and *C*'s, and potential *C* students, by splendid feats of memorization, earned *A*'s—this to a degree not met in the experimental course.
8. The students in this course spontaneously, and without the staff's knowledge, organized study groups in virtually every dormitory, sorority, and fraternity. These groups were led by upperclassmen who had taken and recommended the course to underclassmen.
9. The students organized the only intellectually oriented extra-curricular activity—discussion groups so numerous that it was difficult to provide enough lively and sufficiently interested faculty leaders.
10. Graduate students volunteered their services, sometimes without compensation, as assistants in the course.
11. Of 70 students in an English composition course who were asked by their instructors if they had had an intellectual experience on the campus, only 8 were aware of such an experience in a class. Of these, seven identified the "Bio Sci" course as the one in which it had occurred.⁷

⁷ "Teaching an Integrated Course in the Biological Sciences," *Improving College and University Teaching*, May 1953, p. 3-11.

"The Socratic Method in Modern Dress," *Improving College and University Teaching*, Summer 1957, p. 60-63.

"Inquiry Into Inquiry," *Improving College and University Teaching*, Autumn 1957, p. 93-99.

A particularly interesting feature of this course was that the experimentation was total, not a series of exercises affecting only some part of the course. It involved all the elements discussed here—the lecture, the laboratory, the conference, the examination, and all the time spent in these meetings, including their preparation.

Second, the course was part of a professional sequence and content was not sacrificed. Actually, it was enhanced.

Third, the presentation, the grades, credits, even hours had to be fitted into traditional routines.

Fourth, the students were not academically talented or academically oriented in any special degree. They represented a relatively large cross-section of the students accepted in a land-grant college which, at the time, was accepting all graduates from approved high schools.

Conclusion

A CRITICAL PROBLEM FOR THE COLLEGE TEACHER—whether he realizes it or not—is what is he going to do about the most important part of his job, namely, the imparting of information. An equally critical problem for the administrator and student is how to make good teaching and good teachers go farther. About these related problems, one knows, first, that the teacher should extricate himself from simply transmitting information, and this as quickly and as completely as he can. He should do this because students can inform themselves, if they will, and do it as well without a teacher's personal intercession as with it.⁸ If students will accept, or can be persuaded to accept, their responsibility for the acquisition of information, good teachers can be freed to *teach* rather than to *instruct* or *tell*.

But will students make this contribution to the staffing problem? The answer is that in many programs they have. The difficulty, where there is a difficulty, lies, apparently, more in the reluctance of teachers to abandon their roles as transmitters of information than it does upon the students' willingness to accept a new role. Where students have been given an opportunity for solid and sophisticated independent study, they have usually grasped it with an enthusiasm that surprised their teachers, whose defense of their informing role had been that they did it because their students would not inform themselves.

In involving students in independent study there is, apparently, a right and a wrong time, a right and a wrong way. The right time is the first course in which they enroll at the university; the right way is to be very matter of fact about it, to take them into the new program without fanfare or announcement. When begun in the junior year, independent study programs have been disappointing because the students had become so spoiled by spoonfeeding that they could not be persuaded to do with good grace what freshmen did, and did well, without persuasion.⁹ This is all very disconcerting because it suggests that the longer students associate with some teachers, the more de-

⁸ Hatch, op. cit.; Parsons, op. cit.; and Pfnister, op. cit.

⁹ Samuel Baskin and Ruth Churchill, "Experiment on Independent Study, 1956-1960." Yellow Springs, Ohio: Antioch College.

pendent they become. Why then do teachers insist on wasting their time and that of their students making themselves more and more expendable in the process? Before attempting to answer this question, let us see what is involved when teachers *teach* rather than *tell*.

According to the consensus examined in this publication, good teaching involves active learning, a learning that is characterized by discovery or guided discovery, enquiry or inquiry, or in somewhat more prosaic language, teaching that is problem-oriented. Such teaching obviously makes heavy demands upon a teacher's scholarship. It is, accordingly, no accident that those teachers who are most at home with it are typically scholar-teachers whose weight is well distributed on both sides of the hyphen. The support of this consensus is impressive because besides Gagné, McKeachie, and Tyler stand Bruner and many others who have been doing research on institutional impact, institutional indices, and the attributes of highly productive institutions. Those doing research on personality development and the noncognitive aspects of learning are also included here. A bibliography on much of this research is to be found in *The American College: A Psychological and Social Interpretation of the Higher Learning*.¹⁰

While some of the research referred to above has been done in schools of education, the bulk of it, interestingly enough, has been done by anthropologists, sociologists, and psychologists. Even political scientists and *bona fide* philosophers have gotten into the act. Even more interesting is the way the scientists have discovered for themselves, and convinced themselves, that there is merit in teaching and learning featuring inquiry—or enquiry, as they prefer to spell it.

Finally there are developments, all quite substantial, such as independent study (including honors), study abroad, work-study, administrative and faculty permissiveness, curricular flexibility, and flexible progression that support the case for inquiry. For what is the essence of independent study (and honors), for example, if not inquiry? Permissiveness and flexibility similarly are logical and necessary concomitants to inquiry: for if students are locked in a system in which they must serve time irrespective of the quantity and quality of their efforts, they can hardly be persuaded to make the efforts required in inquiry.

The end and means of teaching and a solution for certain of our most vexing educational problems appear to lie in inquiry.

¹⁰ *The American College: A Psychological and Social Interpretation of the Higher Learning*, Nevitt Sanford, ed. New York: John Wiley & Sons, Inc., 1962, 1,084 p.

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NEW DIMENSIONS
in Higher Education

Number 4

Impact of College

by
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FOREWORD

WITHIN the past few years, several important studies have shed light on the sociology of higher education. These studies have suggested that students often pass through the elaborate and costly process of collegiate education without having their curiosity awakened, their creative abilities developed, or their sense of values enhanced. These recent investigations, utilizing the best available measuring instruments, have caused college administrators to look again, and with a more critical eye, at their total program of instruction and experience.

The research reported here suggests that institutions have three choices: (1) to ignore the subject of their impact on student values, attitudes, and creativity as too difficult to measure or control; (2) to make more modest claims regarding their impact on students; or (3) to study their impact on student values and take steps to increase it. It is hoped that this publication will assist college faculty and administrators in assessing their own influence on the student and in considering ways to increase and make more enduring the college's capacity for the development of human character.

The Mary Conover Mellon Foundation at Vassar College has been one of the leading centers for study of these problems. The author of this paper has been associated with the Foundation as a member of a team of investigators working together over a period of years. The material here published on the impact of the college on the student consequently reflects firsthand experience as well as familiarity with recent research. The author, Mervin B. Freedman, is Coordinator of the Mary Conover Mellon Foundation.

The editorial assistance provided by Mrs. Lanora G. Lewis in the preparation of this manuscript should also be recognized.

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III

THE IMPACT OF THE COLLEGE ON THE STUDENT

ONE COULD HARDLY HOPE to describe all of the relevant social scientific researches on college populations that have been carried out in recent years. It is the purpose of this paper to give an account of the more prominent of such researches into America's higher education.

The findings would appear to be of considerable value to those who are interested in making changes of one sort or another in college procedures. A logical place to start in formulating plans as to how certain educational practices may be improved would seem to be with the knowledge of what actually takes place now in our colleges. How are students changed by a college experience or certain features thereof? Or what does a college education seem to mean to an alumnus 10 or 20 years after graduation?

Answers to such complex questions are, of course, not easily obtained. It can hardly be argued that at this time the social sciences can provide anything like an integrated picture of what happens in our colleges; but a compilation of the more prominent social scientific researches into college education comprises an impressive contribution to our understanding of the process of higher education in America.

A Brief History of Research in the Social Sciences and Higher Education

The more formally academic areas of higher education have received the most research attention. Thus, tests of achievement in one field or another are in a very advanced stage, and there is a considerable body of literature having to do with prediction of college grades on the basis of such factors as rank in one's high school class or scores on College Entrance Examination Board tests. The reason research on such matters is so far along is that it can be carried out with relative ease. Criteria of accomplishment or change are readily agreed upon, and the information necessary to the carrying out of the studies may be obtained with little difficulty. Perhaps the chief explanation for the many studies of prediction of academic success as measured by grades is the sheer avail-

ability of the material: someone decides that something ought to be done with all the information lying around the recorder's or admissions office.

Other kinds of studies present more difficulty. Evaluation of how students' personalities or characters change, understanding of the factors which influence them little or a good deal during the student years, or estimation of the extent to which a life pattern has been altered by attendance at college are complex issues. A study which sheds light on matters like this very likely requires much ingenuity and effort. Moreover, it is interesting to note that, for the past two or three decades until several years ago, social scientists displayed relatively little interest in research investigation of college education.

In the early years of this century our educational system was an area of lively concern for psychologists. Studies of intelligence, aptitude, and interest proceeded at a great rate. The classroom was used as a laboratory for investigations of principles of learning, the matter of transfer of training being an excellent example. Beginning around 1925 or 1930, however, interest in higher educational processes waned. Perhaps this was to a considerable extent a function of the increase in importance of dynamic or motivational psychology. With the increased emphasis upon the personality and the emotions, events of the college years were often viewed as mere unfoldings of powerful inner trends or as manifestations of important directions taken in infancy. Such an outlook tended to disturb educators who were sure that the occurrences of the college years were of great importance in their own right aside from their origins in earlier or infantile experiences. In recent years, however, as cognitive and motivational psychology have grown closer together and increased emphasis has been placed again, in psychology, upon the influence of the intellectual life upon the emotional, the interests of psychologists and educators have grown together increasingly.

The situation in sociology presents a similar picture. A summary of the history of sociological investigations of educational activities is contained in *Sociology and the Field of Education* by Orville G. Brim (9). Brim points out that John Dewey's writings, particularly *Democracy and Education* (22), published in 1916, served as a stimulus for much systematic attention to education on the part of sociologists. Between 1916 and 1925 " * * * numerous colleges began offering courses in sociology and education; the National Society for the Study of Educational Sociology was organized; the *Journal of Educational Sociology* was initiated; and approximately twenty-five texts or major treatises on sociology and education were published" (9, p. 9). But, as in the case of psychology, beginning

around 1930 interest in educational sociology diminished. Thus, Conrad (19) studied the content of articles appearing in the *American Sociological Review* for the decade 1940-50 and reported that only 2.3 percent of the articles dealt with the topic of sociology and education. As Brim points out, however, "An impressive change in the general situation has occurred since about 1950. It is accurate to say that there has been a rapid growth of interest in studies of the educational institution * * *." (9, p. 10).

In the last decade cultural anthropologists, sociologists, psychologists, and psychiatrists have devoted increasing attention to the study of colleges and college students. To a considerable extent this is a response to mounting concern on the part of educators with the procedures and results of our higher educational system. Thus, Fred M. Hechinger, education editor of the *New York Times*, had the following to say about a recent meeting of college presidents sponsored by the American Council on Education: "When college presidents meet, they agree that things are pretty bad * * *. Higher education seems to enjoy a strong dose of self-criticism" (39). It is interesting to note that this self-criticism tends to be a phenomenon *sui generis*. By and large our colleges have not been subjected to the public criticisms which have been heaped upon the high schools in recent years. There are a few vociferous critics of liberal education (15), but they tend to have little mass support. And the charges levelled (7) at our teachers' colleges are seldom generalized to include our liberal arts colleges and universities.

Despite the absence of strong external criticism, there is considerable feeling within our colleges that something is amiss. And this feeling has been a spur to research in the last decade. The time would seem to be ripe for a large number of collaborative research endeavors between social scientists and educators which will greatly expand our understanding of the higher educational system in the United States.

A Report of Research Findings

Like any complex institution in our society a college cannot simply be plucked from its surroundings for study—at least not without recognizing the artificial situation engendered by such action. College personnel—students, faculty, and administration—are part of American society and culture and are influencing American life and being influenced by it at all times. Similarly, one introduces artificiality by reducing a college system to its components and studying in isolation the structure and function of each in turn. Nevertheless, science proceeds by classifying and by dividing nature into relatively arbitrary units of study. -

This is to point out that the rubrics under which the research findings to follow are presented have no special theory which underlies them. They follow a simple chronological scheme. First, the qualities of the entering student. This is followed by description of changes occurring during the college years. Then come studies of alumni. The units we have chosen for classificatory purposes—for example, personality, attitudes, or intellectual development—do not form part of a coherent system. Probably, at this stage of research investigation of the functioning of colleges, the fragmentary nature of the data would not allow otherwise. It is hoped that a growing body of research knowledge will speed the development of systematic and complex designs which will do justice to the workings of educational institutions in some more organized fashion.

The report of research findings to follow is organized under the following headings: (1) The Characteristics of the Entering Student; (2) Changes in Student Characteristics during the College Years, arranged according to (a) Changes in Mental Ability, Skills, and Knowledge, (b) Changes in Attitudes and Values, and (c) Changes in Personality; (3) Studies of the College as an Institution with emphasis on Student Culture and Characteristics of Faculty and Teaching.

The Characteristics of the Entering Student

The diversity of American colleges is a striking phenomenon. We have big colleges and small ones, men's, women's, and coeducational colleges, liberal arts and more technically oriented colleges, public and private colleges, and denominational and nonsectarian colleges, to list only some of the criteria by which we may distinguish among them. Of course, then, some diversity of student body is taken for granted. It is generally recognized, for example, that the students at some colleges are drawn from higher levels of social strata than at others, and that at some colleges the students are well above average in intellectual or academic orientation, while at others they are well below.

Only in very recent years, however, have we begun to receive detailed, systematic knowledge of the differences which exist among students in our colleges. For this information we are indebted primarily to the Center for the Study of Higher Education of Berkeley, Calif., and the National Merit Scholarship Corporation of Evanston, Ill. The research findings of these two organizations make very clear the enormous diversity of student characteristics which may be found among colleges and often within the same colleges. Students differ not only in intellectual capacity as meas-

ured by various tests but also in many other qualities which are highly revelant to the process of higher education.

In 1940 Traxler estimated that the range in average IQ among 323 colleges based on the American Council on Education Psychological Examination was from 94 to 123 (72). McConnell and Heist state that:

*** the differences in the intellectual characteristics of American colleges and universities are so great as almost to defy description ***. In the single State of California, one finds a range of over three standard deviations *** in the mean aptitude scores of entering freshmen among all institutions. In another State, the mean freshman score in the most selective institution was a standard deviation above that of the least selective institution. The mean ACE scores of freshmen in the Protestant and private liberal arts colleges of the North Central Region varied from 94 to 123. *** The variation in means in the Northeast for the same type of schools was from 111 to 131. In the South, excluding Negro colleges, it was from 68 to 123.

So great is the range of average ability of students among liberal arts colleges that although they may be similar in structure, professed purposes, and curricular organization, the intellectual resemblance is superficial indeed. In the intellectual demands these colleges can make on their student bodies they are most dissimilar.

*** Institutions also differ in degree of internal variability. The dispersion of academic aptitude is greater in some colleges and universities than in others, and relatively more homogeneous student bodies may be found among colleges at either extreme of selectivity. But even in the least heterogeneous institutions there are still wide differences in ability. To cite the extreme, we found certain freshmen attending colleges in which their measured aptitude was a full standard deviation above that of the next highest student in the distribution (50).

Heist and Webster (42), Clark (18), Holland (43), and Thistlethwaite (66) have noted striking differences in students both within the same institution and among colleges in characteristics other than direct intellectual performance or capacity. Thus Holland has the following to say about national merit scholars or near-winners (the Certificate of Merit) who choose colleges which rate high in production of scholars who go on to graduate school and obtain the Ph.D. degree:

To summarize, the selection of an institution with a high rating on the Knapp-Goodrich or Knapp-Greenbaum indexes conforms to a pattern indicative of less concern with externals and more concern with intellectual values. Mothers have a high level of education, and both parents express preferences for a small college which will develop the student's intellectual capabilities. Their children, too, desire a small college, and one which has a high academic standing. The personality scores of these students imply capacity for achievement and creativity. This interpretation is reinforced by their preferences for pure rather than applied science and their relatively long-term academic goals. In contrast, the choice of an institution with a low rank is related to personality patterns less favorable for intellectual achievement (43).

Similar personality differences between students who select colleges which rank high in production of scholars who obtain the doctorate degree versus those who choose colleges which rank low were found by Heist (41). He observed that high-ranking institutions have students who are more socially introverted, more complex in their outlook and perceptions, more original, and less authoritarian.

Holland finds other differences among students who attend various types of colleges; for example, private versus public or religious versus nonsectarian institutions. He has the following to say about national merit scholars or certificate of merit winners who choose private rather than public colleges:

In summary, the selection of a private institution is correlated with a high socioeconomic status pattern. Parents have high incomes, advanced education, and many books in the home. They see college training as a way to develop moral standards and intellectual abilities, and to learn how to enjoy life. Their ideal college is a high-cost institution which is private, single-sex, away from home, and noted for its liberal arts training. Their children reiterate these goals and values in explaining their selection. Unlike students selecting public colleges, they aspire to higher educational degrees, have more verbal ability, and are characterized by personality traits which are associated with higher academic achievement (43).

The Mary Conover Mellon Foundation for the Advancement of Education at Vassar College has evidence of quite remarkable diversity in personality characteristics among students in various women's colleges. These colleges are comprised of students who are very similar in terms of socioeconomic and cultural background and in general intellectual level. Nevertheless, mean scores for entering freshman classes may differ widely from college to college. For example, the mean score on the Vassar Developmental Scale of the entering freshman class at one of these colleges exceeds that of the graduating senior class at another. (The Vassar Developmental Scale consists of items which differentiate freshmen from seniors at Vassar College. Its content will be described later.) One may conclude that the freshman classes at institutions which display such widely divergent test results are in quite different stages of maturity or development at the time of college entrance. Their approaches and attitudes to learning and college experience are likely to be highly dissimilar. One group may be no less educable than another, but perhaps different educational procedures are called for in dealing with them.

Such findings about the diversity of intellectual and personality characteristics among students pose many problems for the educator. Is a wide range of intellectual talent among the student body an aid or handicap to the process of education? Fricke (35) suggests that colleges should select from a limited range of ability. A correlative suggestion might well be that colleges with student

bodies differing widely in intellectual capacity pursue different educational goals. That is, should a college which contains a student body whose mean IQ is 100 attempt to do the same things as a college which has a student body whose mean IQ is 125?

In addition to problems of evaluating the importance and effects of intellectual homogeneity and heterogeneity among students, what of the matter of personality characteristics which have important consequences for education? As we have seen, even when intellectual level is held constant, students and student bodies may differ widely in such ways as degree of readiness for new experience, interest in practical versus more liberally oriented education, or orientation to graduate or professional schooling or further learning. And what of the problem of the individual who is markedly different from his fellow students in various ways, for example, the student who is much brighter than almost every other student in his class or perhaps much more attuned to the more liberal rather than practical aspects of education? Clearly, these are matters which require much research and much thought on the part of educators.

Changes in Student Characteristics Occurring During the College Years

Some of the changes which take place in college students between the years 17 or 18 to 21 or 22 are certainly unrelated to college experiences; that is, they would take place even in the case of individuals not in attendance at college. Unequivocal empirical determination of the differential effects of college experience are impossible to attain. Required for such a study would be two groups of high school students alike in every way except that one goes on to college, while one does not. The very fact that students choose not to go on to college makes them a somewhat inadequate control group. Nevertheless, high school graduates who do not go on to college should be compared with those who do. And students in many different kinds of colleges should be compared for their similarities and differences. In such fashion a great deal could be learned about the special nature of college influence.

In the discussion to follow the changes in student characteristics occurring during the college years are discussed under three headings: Changes in Mental Ability, Skills, and Knowledge; Changes in Attitudes and Values; and Changes in Personality.

Changes in Mental Ability, Skills, and Knowledge

Knowledge of our cultural heritage is, of course, one of the primary aims of college education and undoubtedly the goal upon

which almost every educator will agree. Achievement tests which measure the extent of knowledge in various fields are highly developed. This paper will make no attempt to summarize or evaluate such studies except to quote Dr. C. Robert Pace of Syracuse University (54) on the subject of results based on such tests: "On the basic objective which we might call the transmission of significant knowledge, the colleges are in fact successful. With almost no exception across the country where *achievement* testing has been applied, the average scores of seniors, juniors, and sophomores are *significantly* higher than the average scores of freshmen—whether tested cross-sectionally or longitudinally."

In addition to increased knowledge of content or subject matter as measured by achievement tests, there is the very large area of other kinds of goals of liberal education, such as improvement in the ability to think critically or communicate effectively. The Committee on Measurement and Evaluation of the American Council on Education has sponsored a considerable amount of research in an attempt to ascertain the degree to which such changes take place in college students. Probably the most comprehensive survey of this type of research is contained in *General Education—Explorations in Evaluation* by Paul L. Dressel and Lewis B. Mayhew (23). This book contains an account of 11 years of investigation of programs of general education, surely one of the most ambitious and complicated educational researches ever carried out.

A sample of the contents of this book follows:

After considering a number of objectives frequently claimed for general education courses in social science, the Intercollegiate Committee on Social Science Objectives selected critical thinking for its area of particular inquiry. The meaning of critical thinking in social science was specified in a list of abilities and was then exemplified by test situations and examples of student behavior. After the members of the committee were convinced of the validity of their conception of critical thinking in social science and had tried out on students various kinds of appraisal techniques, an objective-type test of critical thinking in social science was developed, revised, and printed in a final form. This test was administered to a great many entering freshmen at a number of participating colleges, and to these same students or to comparable groups at the end of the freshman year and at the end of the sophomore year. The changes in test scores over these time intervals were studied with a view to determining their magnitude and the factors associated with them. In general, it was found that students gained in ability to think critically in social science over a period of a year, although the size of these gains varied widely, depending on the institutions that students attended. Attempts to teach critical thinking in social science by making minor changes in particular courses did not appear to result in greater growth than was found in courses not making overt attempts to teach this skill. Attempts to relate growth in critical thinking ability to course organization or to specific teachers suggested that both of these were highly important, although the research could not identify specific factors that seemed to be operative (23, p. 66).

In recent years the development of basic mental abilities after the age of 17 or so has received increased attention. Allied to this has been the interest, in the last decade, of social scientists in investigation of the qualities of creativity and originality. Explorations in these areas will undoubtedly have profound implications for higher education.

It has been widely believed that increments of improvement in intellectual functioning are negligible after ages 14 to 17 or thereabouts. Thus, no less an authority on the development of intellectual functions than Piaget says:

* * * this work seems to imply that the thinking of the adolescent differs radically from that of the child * * * he gradually structures a formal mechanism (reaching an equilibrium point at about 14-15 years) (45, p. 335).

Of late there has been some disposition on the part of psychologists to question this view. With regard to the notion that increments of improvement in intellectual functioning are minimal after the age of college entrance, Webster (74) has this to say:

It seems safe to conclude, however, that this is an over-simplification, and that the maturation of mental ability continues well into the college years * * *. We may learn more about the details of this when ability testing itself has become a more mature science * * *. Learning and mental ability are both in a highly undeveloped state in college freshmen in comparison with older students. Moreover, there is some evidence that the higher the potential mental ability, or capacity, the less likely it is to have been approximated at the time of admission to college.

Along with this revision in thinking about the maturation of mental abilities, there is a renewed interest in the phenomenon of transfer of training. As is well known, throughout the 19th century and part of the 20th the classical school or college curriculum had been defended by "traditionalists" on the grounds of mental discipline. As the field of intelligence and abilities testing developed under the stimulus of the work of Galton and S. McKeen Cattell, a series of researches was carried out which questioned the whole notion of the older faculty psychology with its transfer of training principle. These researches reached their height with Thorndike and Woodworth (68, 69), and by 1920 the argument that there could be a universally valuable mental training seemed to be pretty well demolished.

In 1950, however, Guilford suggested that a reformulation of the problem of transfer of training was needed. He commented as follows:

Before we make substantial improvement in teaching students to think, in my opinion we will have to make some changes in our conceptions of the process of learning. The ancient faculty psychology taught that mental faculties grow strong by virtue of the exercise of those faculties. **263** all know

from the many experiments on practice in memorising that exercises in memorising are not necessarily followed by improvement of memory in general. We all know that exercises in perceptual discriminations of certain kinds are not followed by improvement of perceptual discriminations in general * * *. Following this series of experiments the conclusion has often been that learning consists of the development of specific habits and that only very similar skills will be affected favorably by the learning process.

In view of the newer findings concerning primary abilities, the problems of formal discipline take on new meaning, and many of the experiments on the transfer of training will have to be reexamined and perhaps repeated with revised conditions * * * the other alternative to the idea of formal discipline is not necessarily a theory of specific learning from specific practice.

There is certainly enough evidence of transfer effects * * *.

A general theory to be seriously tested is that some primary abilities can be improved with practice of various kinds and that positive transfer effects will be evident in tasks depending upon those abilities (38).

The time would seem to be ripe for empirical reexamination of this most important area. Research findings here could conceivably lead to major curricular changes. One such empirical investigation is that being carried out in the Detroit public schools by Thelma Gwinn Thurstone (70). Jerome Bruner and his colleagues at Harvard University have been conducting experiments in recent years on many aspects of the processes of thinking and learning including transfer of training (12, 13, 14).

As has been mentioned earlier, the problems of prediction of college performance, as measured by grades, on the basis of such factors as high school grades or scores on College Entrance Examination Board tests have been quite extensively investigated. This literature is summarized in an article by Travers (71). Considering the generally recognized limitations of grades, it is surprising that so few studies have been carried out which entail some criteria of college achievement or performance other than grades. Perhaps the only study of this kind is one carried out by the Mellon Foundation at Vassar College under the direction of Donald R. Brown (11).¹

This study centered on the characteristics of students who were judged by members of the Vassar College faculty to approximate very closely their image of the "ideal student." It is interesting to note that only slightly more than half the students so nominated had grade point averages of 3.0 (corresponding to an A average). Dr. Brown studied the characteristics of four groups of students—those who were nominated and who had grade point averages of 3.0, those who were nominated and who had lower grade point averages, those students who had grade point averages of 3.0 and

¹ This research was supported in part by a grant from the College Entrance Examination Board.

who were not nominated, and a random sample of the remaining students.

The results of this study shed light on diverse elements of student development which are often obscured by attention to academic progress as measured by grades alone. Thus, students nominated as "ideal" who had grade point averages below 3.0 are described as "higher on impulse expression, lower in authoritarianism and ethnocentrism, higher in social maturity, and have a factor pattern which would indicate a personality more tactful about describing self and others, more perceptive, aware of strong impulses, more realistic, and more mature than their nonnominated peers and for that matter than their nominated above 3.0 peers" (11, p. 33). As compared to nonnominated students those nominated are "lower on authoritarianism and ethnocentrism, higher on developmental status and social maturity as both freshmen and seniors, and less integrated into the Vassar peer culture as freshmen" (11, p. 38).

Although studies of academic performance as evaluated by measures other than grades are extremely rare, some recent studies have centered on personality and nonintellectual factors associated with underachievement or overachievement. Underachievement and overachievement are, of course, attainment of grades higher or lower than would be anticipated on the basis of high school grades or aptitude and achievement test scores.

Prominent among these studies are those carried out by research workers on the staff of the Division of Student Mental Hygiene, Department of University Health, Yale University (52, 57, 58, 59). In one of the latest of these studies, Rust reports on a study of under-, normal-, and overachievers in Yale College and Yale School of Engineering. " * * * in the face of pressure from peer groups * * * overachievers are less likely to give in to such pressure. This would seem to demonstrate a certain self-propulsion which operates even when adult supervision is absent or diminished * * *. Overachievers * * * were less likely to report that they smoke or drink or that they have had sexual intercourse * * *. Overachievers are more likely to have selected an occupation * * *. Overachievers are less likely to have a Yale father, are more likely to have attended high school only and are less likely to expect help from their family, relatives, or from close family friends in getting their first permanent job" (59).

Changes in Attitudes and Values

Aside from the more formal academic types of studies, for example, prediction of academic success, the area of attitudes and

values has perhaps received more attention than any other over the last two or three decades. Thus, although college experience was quite neglected on the whole by social scientists in the decade 1930 to 1940, a number of social psychologists were at work in this period assessing such matters as liberalism versus conservatism in economic outlook, attitudes toward minority group relations, or views on military service, war, pacifism, and the like, and changes in these during the college years (3, 8, 20, 28, 29, 44, 47, 48).

Undoubtedly the most prominent work in this field in recent years has been *Changing Values in College* by Philip Jacob (46). This book contains an account of a large number of recent researches into the attitudes and values of American college students. The studies upon which Jacob relies most are those by Dressel and Mayhew (23) and the Cornell Values Survey being carried out at the Social Science Research Center of Cornell University by Rose K. Goldsen, Morris Rosenberg, Edward A. Suchman, Robin M. Williams, Jr., and their colleagues (17, 56).

Jacob's general findings may be summarized as follows: There is a profile of values which holds for 75 to 80 percent of all American college students, a campus norm of values which prevails in the 1950's, coast to coast, at State university or denominational college, for the ivy leaguer or city college commuter. The current student generation, he says, is gloriously contented in regard to its present day activity and its outlook for the future. Students are unabashedly self-centered in outlook, aspiring above all to material gratifications for themselves and their families. Though conventionally middle-class they have an easy tolerance of diversity and are ready to live in a society without racial, ethnic, or income barriers. The traditional moral virtues, such as sincerity, honesty, and loyalty are highly valued, but there is little inclination to censor laxity, which students consider to be widespread. A need for religion is generally recognized, but students do not expect religious beliefs to govern decisions in daily living. Rather, they anticipate that these decisions will be socially determined. The general tendency is to be dutifully responsive toward government, but there is little inclination to contribute voluntarily to the public welfare or to seek an influential role in public affairs. Attitudes toward international affairs are strangely contradictory. Another war is predicted within a dozen years, yet international problems are the least of the concerns to which students expect to give attention in their immediate future. Finally, students tend to set great stock by college in general and their own college in particular, regarding vocational preparation and skills and experience in social relations as the greatest benefits of college education.

With regard to changes in attitudes and values that may occur during the college years Jacob has the following to say:

The main overall effect of higher education upon student values is to bring about general acceptance of a body of standards and attitudes characteristic of college-bred men and women in the American community. There is more homogeneity and greater consistency of values among students at the end of their 4 years than when they began. Fewer seniors espouse beliefs which deviate from the going standards than do freshmen (46, p. 6).

For the most part there is no disposition on the part of educators and research workers to disagree strongly with Jacob's conclusions. Some critics are of the opinion that Jacob is somewhat overly censorious. David Riesman (55), for example, points out that students are not materialistic in the sense of desiring great wealth or power and are not self-centered in the sense of lack of any concern with community affairs. Rather they desire to live lives centered on the welfare of their families and the local communities in which they live. Riesman also points out that Jacob's emphasis on the uniformity among college graduates tends perhaps to obscure the fact that college probably has made some difference in that college graduates differ in important ways from the noncollege elements of the population, even though these differences may not be marked. Some of these differences will be discussed in a later section on studies of alumni. Despite these and other criticisms there does seem to be substantial agreement with Jacob's view that college students in general are lacking in idealism and strong internal principle and that the effects of college upon attitudes and values are often minimal.

Jacob's material is supported by a valuable study carried out by Gillespie and Allport (37). By means of a specially designed questionnaire they surveyed the views on the future of college and university students in 10 countries including the United States. What most sharply distinguished the American students from those of most other countries was their accent on what Gillespie and Allport call "privatism." This is what Jacob called unabashed selfishness. It is the inclination to seek a rich, full life for one's self and one's family; to think in concrete and practical terms about the material benefits—job, home, facilities for recreation—that one expects to attain and enjoy. And this while remaining unconcerned about important social problems. This is in marked contrast to the outlook of students in relatively backward countries, for example, Mexico, whose fondest hope often is to contribute something to the country, to help eliminate poverty or disease or help raise the standard of living. Gillespie and Allport also supplied evidence in support of the common impression that French and German students

often see the future primarily as an opportunity for "building their characters" or "developing their personalities," qualities that were very rare in the responses of American students.

It would seem that in our college students of today we have a pattern of attitudes and values that is distinctive. By noting that student outlooks differ from one country to another we gain an important lead in the understanding of the American students of today. They must be understood, in part at least, as products of traditional American culture and as people who are responding to the present condition of American society. To put this in another way, we must recognize that what happens in our colleges is very much a function of what is happening in our American society at large. The ethics of the times is reflected in what college students value and how. The striking correspondence between the outlook of college students and events on the national or even international scene is demonstrated in a study of Vassar alumnae carried out by the Mellon Foundation (32, 33). The attitudes and opinions of Vassar alumnae in various important realms—religious, social, political, and the like—have been surveyed for all decades going back as far as 1904.

This correspondence between the outlook of college students and the spirit of the times is illustrated by the results obtained with the alumnae of the early forties, the classes of 1940 through 1942. Of all groups of alumnae studied, and as compared to Vassar students of the last 5 years, this group of alumnae is the most internationally minded, the one with the most faith in science and reason, the least ethnocentric, the most realistic or least blindly romantic. The following statements are examples of items taken from the questionnaire used in the survey.

The alumnae of the early forties disagree most with this statement: "Obedience and respect for authority are the most important virtues that children should learn." The alumnae of the early thirties match the alumnae of the early forties in being most rejecting of this belief: "Science has its place, but there are many important things that can never possibly be understood by the human mind." The alumnae of the forties disagree most with the idea "Now that a new world organization is set up, America must be sure that she loses none of her independence and complete power as a sovereign nation," and also with the statement "What this country needs more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith." It is interesting to note that the internationalist and politically liberal outlook of the alumnae of the forties is not accompanied by an equally liberal outlook in economic matters. These alumnae dis-

agree most with the opinion "It is up to the Government to make sure that everyone has a secure job and a good standard of living."

In accounting for the general outlook of the alumnae of the early forties it does not appear that experiences appreciably prior to college, for example in childhood, or experiences subsequent to college explain this outlook as well as do events on the national and international scene circa 1940. The alumnae of the early thirties, the Classes 1929-35, were studied when their average age was 43. The alumnae of 1940-42 were studied when their average age was 36. It is not likely that the differences between these groups that are found in adulthood are consequences of differences in upbringing in the period after 1910 rather than after 1919 or as consequences of appreciably different life experiences for women who average 43 rather than 36 years of age, particularly when the outlook of the alumnae of the early forties corresponds so closely to the ethos of the times—the brotherhood of man, fervent democratic idealism, imaginative postwar planning, and the like. The evidence seems to be preponderantly in the direction of the effect of events at large on the opinions and beliefs of the students in school at Vassar in the early forties, and—remarkably, perhaps—the persistence of these opinions and beliefs over a period of some 15 years.

Thus, in considering the origins of the opinions, attitudes, and beliefs of current American students the Mellon Foundation is very much inclined to give considerable prominence to American culture and tradition, to the recent history and current state of American society. It would seem that in order to understand the situation and outlook of today's students one must consider, at least, our stage of industrialization, some of the consequences of mass communication and mass culture, and the present era of internal stability with prosperity and peace (albeit an uneasy one) following a long period of depression, war, and intellectual ferment. Several publications of the Mellon Foundation discuss these matters (16, 31, 60, 63), particularly one by Sanford (60) from which the following passages are quoted.

Concerning the state of industrialization in this country it seems an understatement to say that it is very advanced indeed. What concerns us here is not the unparalleled output of goods but the degree to which human activities are organized in our society. When a college student looks at the vast impersonal processes of our society and asks where he can fit in, he is not necessarily open to the criticism of being a mere conformist. Perhaps he is being realistic. Perhaps he sees that we live in a society which to an increasing extent organizes intelligence rather than one which intelligence organizes. Opportunities for individual initiative or for the exercise of talent on one's own terms have actually decreased * * * so has the number of social or professional roles we can take. The student looks at some areas of social or political or economic process and asks, "What can one person

do?" Before we berate him or her for indifference, or passivity, or apathy, let us consider that it probably is much more difficult for one person to make an impact on social processes than it used to be.

With our advanced industrialization go the extraordinary phenomena of modern communication and of standardization in our civilization. These are not necessary evils in themselves, but they have had one effect in the colleges that is somewhat depressing; that is, colleges no longer get those diamonds in the rough who provided such joy for the teacher—men and women from various traditional backgrounds, so far "unspoiled" by the more effete, modern ways, but intelligent and eager, ready to shine under the teacher's devoted hand. Today the boy from the lower East side or the girl from Rabbit Ears Pass arrive with much the same material baggage and cultural stigmata. It has become much harder and much less interesting to tell where a student comes from. This uniformity is not primarily the result of any psychological need to conform. I should doubt that this need is very different from that found in students of 20 or 30 years ago. It is rather that today's students live in a less differentiated society: there are fewer patterns with which to conform.

An aspect of our mass culture that ought to be mentioned is the popularization of psychology, or perhaps more appropriately, of a psychology of adjustment. Of course, the value for fraternity, for 'getting along with others' has been an important aspect of American culture from the beginning. Probably the accent on this value has been increasing in recent years. There has been for some time a vast body of literature on how to bring up children, how to achieve harmony in the social group, how to adjust one's personality, and so on. I believe this has had a very considerable effect. The home, the school, the college seem far more adept than they used to be at keeping everybody happy. Certainly college students at the present time exhibit far more social skill than those of previous eras. Current students are very proficient at helping one another over social and psychological problems. Sometimes complaints about today's students seem to be based on envy of their complacency or perhaps disappointment that they do not present problems with which adults can help.

It seems paradoxical to refer to the time of the Cold War and the hydrogen bomb as a period of relative stability. I do not, of course, mean actual stability, or stability in any fundamental sense; for, as we all know only too well, there could be an explosion at any time. Perhaps we should rather describe the state of the world as one of rigidity, a state in which there is widespread feeling that one must not move lest something snap. But people cannot live in the condition of being constantly poised to run for cover. So, wishing for stability, it is easy to convince one's self that everything is fine and will stay that way. Students, at any rate, tend to see present arrangements in our society as likely to persist indefinitely, and they are able to face the future with bland optimism about their own prospects.

Granting that the current scene may be one marked more by rigidity than by stability, the contrasts with other recent periods of our history are none the less marked. We are not now experiencing anything like the excitement, the mobility, the ferment of the jazz age, or the depression, or World War II. Correspondingly there is relative quietude on the intellectual and ideological fronts. In the early years of the century we had the movement toward greater freedom for women; in the '20's we had Freud and the revolution in

morals; in the '30's we had the depression, social change, and the influence of socialist economic theory; in the '40's the war, fervent democratic idealism, imaginative postwar plans. What are the big ideas of the '50's? The automatic anticommunism of recent years has not been exactly inspiring. Efforts to bring about a return to religion or to evolve a new religious outlook have been rather feeble—in some cases perhaps even phony. One does not hear much intellectual discussion on the campus for the simple reason that there is not very much to discuss. Times will undoubtedly change, and new ideas will appear, but for the time being we are in cultural and intellectual doldrums. This I would posit as a major source of student lethargy.

In concluding this section it should be noted that two books have been published very recently which emphasize the positive qualities of students or at least the potential of many students for development of character or moral qualities considerably beyond their present levels. These are *The College Influence on Student Character* by Edward Eddy and associates (24) and *They Come For the Best of Reasons* by Max Wise (78). These books tend to place stress upon qualities of openness to learning or new experience or dissatisfaction and honest search for truth or meaning that one may find in students, if one penetrates beyond somewhat superficial or surface knowledge of them. It may be that these qualities of students are not adequately revealed by various questionnaires, tests, and similar quantitative studies. It was the opinion of the Mellon Foundation staff that interview studies of Vassar students often revealed a depth or complexity of experience that more objective methods of study had not made quite so manifest.

Remarks like those quoted above by Sanford on the general intellectual lethargy of our times and books like those of Eddy and Wise have tended to focus attention on defects of leadership in our colleges. There is a considerable body of feeling, perhaps best expressed in Eddy's book, that more inspired teaching, educational planning, and the like would be amply rewarded by enthusiastic student response.

Changes in Personality

Change in personality during the college years is an area in which research has hardly begun to scratch the surface. Not that no studies exist in this field, or very few. The number of studies, as such, is not small. In fact, the researches reported in the previous section on changes of attitudes and values very likely should be considered as falling within the purview of changes in personality. That is, attitudes and values may be regarded as elements that may be subsumed under the rubric of personality. What is lacking, however, is a systematic or comprehensive design for organizing disparate studies and for conceptualizing the whole proc-

ess of personality development during the college years or from age 18 to 22.

Sanford defines education in its traditional sense, that is, as knowledge of our cultural heritage. Maturity for him is the quality which essentially distinguishes children from adults, the predominance of the controlling, discriminating, analyzing, and decision-making functions over the passionate or impulsive functions. Health is the capacity to manage strains, to remain stable while dealing with complexity, difficulty, or crisis. Attempts may be made to assess progress to one or another of these goals independently of the others.

Designs like those of Sanford and White offer the prospect that eventually the disparate phenomena of change in the college years may be organized in systematic fashion. Eventually we may hope to have end-points and units of measurement of change in personality corresponding to those we now have for intellectual and physiological growth.

As was mentioned earlier, educational and social scientific publications contain a fair number of reports of studies of personality change during the college years. A good summary of most of these studies may be found in Webster (73). Lacking the context of a longitudinal theory of personality development most of these studies report changes on one test or measure over a fairly brief period of time, for example, one year.

Probably the most comprehensive study of personality development during the college years is that being carried out by the Mellon Foundation at Vassar College (34, 62). Vassar students and alumnae have been studied over a 7-year period by means of tests and interviews. The test studies have centered on the nature of the differences between freshmen and seniors, while the interview studies have attempted to shed light on the factors operative in the college situation which bring about these changes.

It was mentioned earlier that until fairly recently social scientists tended to view personality development in the college years as pretty much a function or reflection of earlier events. That is, the personality was thought to be fairly well "jelled" by the age of 18, if not 15 or perhaps even 5 or 6. Of late, however, evidence has been accumulating that there are important and systematic personality changes taking place during the college years. The Mellon Foundation at Vassar College and studies at Yale (75), Harvard (36), and Princeton (40) Universities and at Sarah Lawrence College (51) demonstrate this phenomenon. Psychologists like Erikson (25, 26, 27), White (76), and Sanford (60, 61, 62, 63) are at work evolving theories by which personality development and growth during the college years may be conceptualized and evaluated.

Such theorizing offers the prospect of agreement upon goals or phases of personality development which are readily translatable into the rhetoric of educators or liberal education. Thus, White (76) conceives of the developmental "tasks" of late adolescence or the college years as the freeing of interpersonal relations, the humanization of conscience, the achievement of ego-identity, and the deepening of interests. Many of the goals of liberal education that one may glean from a reading of our college catalogues have a similar ring, e.g., "awareness of other people and other cultures, a sense of one's place in history and in society, independence of judgment, or a sense of reality."

Similarly Sanford (63) presents criteria by which we may distinguish among such goals of development as educatedness, maturity, and health. These are defined in such ways as to be conceptually independent of one another. Such distinctions are of great value, for too often one all-encompassing goal of development is posited in such a way as to make its definition and evaluation almost impossible. Thus, on occasion, education or maturity are so defined as to include every conceivable positive quality or virtue. Finer conceptualizations offer considerably greater opportunity for evaluation and research.

Three tests have been developed which encompass the major differences between freshmen and seniors. These are the Developmental Status Scale, the Impulse Expression Scale, and the Social Maturity Scale. On all of these scales seniors score higher than freshmen.

The Developmental Status Scale measures the following characteristics (that is, high scorers or seniors possess more of these qualities): freedom from compulsiveness, flexibility and tolerance for ambiguity, critical attitudes toward authority (including parents or family, the state, organized religion, rules, and the like), mature interests, unconventionality or nonconformity, rejection of traditional feminine roles, freedom from cynicism toward people, and realism. The findings on the Impulse Expression Scale are somewhat similar. This scale reveals that seniors display more of the following traits as compared to freshmen: dominance, aggression, autonomy, need for recognition, and need for change and stimulation.

The Social Maturity Scale is a measure of authoritarianism (1), a personality syndrome which has yet to be defined with precision but which nevertheless is predictive of behavior in a variety of situations. Authoritarian qualities, those possessed by *low* scorers on the Social Maturity Scale or freshmen as compared to seniors, are the following: rigidity, intolerance of ambiguity, punitive morality, submission to power, conventionality, cynicism, and anti-intellectualism.

The differences between freshmen and seniors at Vassar College have been summarized as follows:

* * * the seniors are more educated and more mature but less "feminine" and less stable.

That seniors are more educated in the sense of having more knowledge of their cultural heritage can be taken for granted. Undoubtedly the decreased authoritarianism and conventionality, and the increased tolerance, religious liberalism, and value for the intellectual are in some part due to this process of education; and the same may be said for the increase in cultivated tastes and interests and in the attitudes of skepticism and criticalness.

In stating that the seniors are more mature we mean that they have gained both in expression of impulse and in mechanisms of control * * * lower scores on the authoritarianism scales and other findings, for example, that seniors can be high on the social dominance and confidence scale but still admit difficulties, are evidence of increased differentiation, discrimination, and mastery.

Being less "feminine" is closely related to being more educated and more mature. Increasing acceptance of intellectual values, decreasing stereotypy in the perception of the sexes and of sex roles, increasing differentiation in the conception of what one can do without endangering one's feminine identity are bound to make for lower scores on the traditional femininity scales.

Evidence from * * * the developmental and impulse expression scales leaves no doubt that seniors are more unstable, more disturbed, or one might better say more "upset," than are freshmen * * *. One might say that if we were interested in stability alone, we would do well to plan a program designed to keep freshmen as they are, rather than to try to increase their education, their maturity, and their flexibility with respect to sex role behavior. Seniors are more unstable because there is more to be stabilized, less certain of their identities because more possibilities are open to them. Processes making for differentiation and complexity have run somewhat ahead of processes making for equilibrium (62, p. 41).

The question of the representativeness of these findings is, of course, important. That is, to what extent are these changes which occur between the freshmen and senior years at Vassar College characteristic of other college women? The Mellon Foundation has data from other colleges bearing on this matter. It appears that the same kinds of trends hold at colleges other than Vassar, even at colleges quite different in organization or curriculum or in the intellectual and socioeconomic backgrounds of the students in attendance. As one would expect, in some cases women at other colleges differ considerably from Vassar students on various scales or measures. But nevertheless the same kinds of trends obtain between freshman and senior year. Of course, the similarities and differences between male and female students in the various characteristics previously described is at present an open question, one on which research is needed.

Studies of the College as an Institution

A logical sequel to discussion of the changes that take place during the college years is attention to the forces that bring about such changes. How are students influenced by the content of their courses, by readings, by the personal qualities of faculty members, by association with other students, or by people and events beyond the actual college confines? Such issues are, of course, exceedingly complex, and most researches that have been carried out to date on changes in students during the college years largely ignore these considerations.

Studies of colleges as institutions in which students are "socialized," as societies in which a great variety of knowledge is absorbed in formal or informal ways, are discussed below under two headings: Student Culture and Society and Characteristics of Faculty and Teaching.

Student Culture and Society

A pioneering study of student culture and society was Angell's *The Campus—A Study of Contemporary Undergraduate Life in the American University* (2) published in 1928. Angell presented a systematic account of student life at one of our large universities. The parallels between conditions in the mid-1920's and now are striking. Newcomb's *Personality and Social Change: Attitude Formation in a Student Community* (53) was published in 1943. Newcomb demonstrated a close relationship between the prestige of students among fellow students and attitudes held by students. That is, on the campus under study in the late 1930's liberalism of political and social outlook tended to be associated with prestige among one's fellow students. Conversely, conservatism of outlook tended to be associated with somewhat lower esteem and popularity.

Since 1943 a number of articles have been published which describe campus society and culture in American colleges. Prominent are those by Becker and Geer (5, 6), Brookover (10), Bushnell (16), Davie and Hare (21), Freedman (30), and Smucker (64). These studies emphasize the potency of student culture and society in influencing the educational process for better or for worse.

In this connection Freedman (30, p. 14) says the following:

We believe that a distinguishable culture exists * * *. The student body as an entity may be thought to possess characteristic qualities of personality, ways of interacting socially, types of values and beliefs, and the like, which are passed on from one "generation" of students to another and which like any culture provide a basic context in which individual learning takes place. We contend, in fact, that this culture is the prime educational force at work

in the college, for, as we shall see, assimilation into the student society is the foremost concern of most new students. Suffice it to say now that in our opinion the scholastic and academic aims and processes of the college are in large measure transmitted to incoming students or mediated for them by the predominant student culture.

Characteristics of Faculty and Teaching

Despite the complexities of research on the classroom situation and the effects of various kinds of classroom climates on the outcomes of teaching, a number of such researches have been carried out. An account of this kind of research may be found in a paper by Stern (65). Pace and Stern have developed an instrument called the College Characteristics Index (54), which is an ingenious device for evaluating and measuring the extent to which colleges are similar or different in general atmosphere. By means of the College Characteristics Index colleges may be characterized according to whether students are treated formally or informally by faculty, whether faculty demands upon students are heavy or light, whether the general teaching procedure emphasizes lecturing versus freer discussion, and the like. Stern (65) has developed an Activities Index which is the counterpart for the individual student of the College Characteristics Index. That is, the Activities Index measures the extent to which a student's dispositions or needs may be "congruent" or "dissonant" to the general climate of the college. For example, one may evaluate the extent to which a student is somewhat dependent in the learning situation, that is, requiring of external or faculty suggestion and direction, and the extent to which the college he attends is likely to be one which generally meets such needs.

Evidence has been accumulating that the College Characteristics Index and the Activities Index will be of great value in research in higher education. For example, Thistlethwaite (67) reports a study which demonstrates a relationship between motivation to seek the Ph.D. in arts, humanities, and social sciences and certain measures of faculty behavior taken from the College Characteristics Index. According to Thistlethwaite, "The following traits seem to characterize faculties outstandingly successful in encouraging undergraduate students to get the Ph.D. in the arts, humanities and social sciences: (i) excellent social science faculty and resources, (ii) a high degree of energy and controversy in instruction, (iii) broad intellectual emphasis, (iv) frequent contacts with students outside the classroom, (v) a flexible, or somewhat unstructured, curriculum, (vi) emphasis upon independent study and the development of a critical attitude, (vii) excellent offerings in the arts and

drama, (viii) relatively infrequent appraisals of student performance."

In summary, it can be said that social scientific research on college populations has already reached a stage of development where it can be useful in the selection and analysis of the student body, the planning and evaluation of curriculums, the determination of teaching outcomes, the persistence of college effects upon alumni, and the establishment of institutional profiles.

Instruments have already been developed and validated to measure some of the intangibles under examination. To continue this line of inquiry there is a need not only for instruments to quantify forces in the collegiate society not yet measured. Before this area can be thoroughly understood there must be a coordinated effort in the social sciences, especially between the sociologist and the psychologist, to identify and define as many of the noncognitive quantities as can be isolated. This effort could very well open the door to a vastly increased knowledge of what happens to our youth during and after college that has not been measured by present course examinations and grade systems.

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NEW DIMENSIONS
in Higher Education

Number 5

Management of Learning

by
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FOREWORD

THE PURPOSE of this report is to indicate the areas of academic administration with which current thinking is concerned, and to suggest a conceptual scheme reflecting these areas and pointing directions for future studies.

With this purpose, the report confines itself to reviewing significant and representative work, both published and unpublished, that develops new insights into the theory, the process, and the operations of college and university administration. It does not survey all recent research, nor does it report the particular outcomes of studies reviewed. The end product, and an important contribution of this report, is a structural design for ideas on the administration of higher education.

The author, dean of the Evening Division of Hofstra College, is an academic administrator with experience of practical problems. He was also associated with John Corson in the study of the governance of colleges and universities sponsored by the Carnegie Corporation.

It is hoped that this report will call attention to the newer ideas in college and university administration and provide further impetus to the development of this field.

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III

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Within the Division of Higher Education, many staff members have been involved in this publication and others in the series "New Dimensions in Higher Education." Credit for the evolution of the series, and for the staff working paper, "A Design for Cooperative Action," from which it grew, belongs to the entire staff of the Programs Branch, Division of Higher Education. In the process of publishing this report, valuable advice and comment were given by Dr. E. V. Hollis, Director, and Dr. S. V. Martorana, Chief, State and Regional Organization Section, College and University Administration Branch, Division of Higher Education. Particular credit should go to Dr. C. L. Neudling for editing and revision.

IV

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v

Management of Learning

INTRODUCTION

IN Government, in business, in industry, in practically every aspect of society, the increase in the size and complexity of man's organizations has become a 20th-century phenomenon. With this increase, the task of organizing people in large enterprises has assumed major importance.

The problems inherent in administering large businesses and complex Government bureaucracies led, about 30 years ago, to a number of systematic analyses seeking in part "a science of administration." Henri Fayol and Mary P. Follett started a trend in this connection which is further illustrated by such classic statements as *Papers on the Science of Administration* (edited by Luther Gulick and L. Urwick) and *The Functions of the Executive* (Chester I. Barnard). A rapidly expanding bibliography gives evidence of continued effort to improve understanding of administration in large organizations.

Universities and colleges now confront similar conditions stemming from increased size and complexity. Educators have begun to examine more intensively the administrative relationships which characterize their institutions. This report will draw upon recent studies, articles, and other published material, as well as investigations underway but not in print, to illustrate this development.

Administration, an Activity in Need of Systematic Study

Some educators question the validity of such study on the premise that administration is essentially an art. In contrast, one business school professor has urged the "reduction of educational objectives into measurable and hence controllable terms."

This report presents a middle ground, suggesting that much can be done to derive, if not a science for administration, at least greater insights into man's organizational relationships. Such insights will enable administrators to understand better what makes them function more effectively. This report therefore adheres to the following assumptions:

1. That administrative activity is increasingly a universal concern for man. He more and more works and lives as a part of larger and more complex

organizations. These organizations require direction and control. Just as man by the creative use of his intelligence has achieved a greater control over his physical environment, so can he improve his ability to handle his organizational activities. By applying intelligence and knowledge to administrative relationships and procedures, he can develop guide lines to direct decisions.

2. That administration as an activity has components which permeate the various kinds of institutions and specialized fields of endeavor. Colleges and universities can benefit from the insights of administration in business and Government. All deal with one common element—men and women.

Basic Assumption: The Need for Effective Administration To Meet Problems of Size and Complexity

Widespread attention has been given to the increasing pressures upon college and university administrators. Swelling enrollments and demands for increased services are difficult to accommodate because of limitations upon financial resources and increasing costs of operation. Growth in size and complexity has in the larger institutions led to an administrative bureaucracy of personnel and procedures. This has occurred at a time when the rate of change in man's social institutions and in his control over his physical environment is accelerating geometrically.

For the college and university administrator, this prompts two basic questions:

1. How do administrators exert that kind of leadership which helps to keep their institutions in tune with a rapidly changing environment so that they maintain their position of intellectual leadership and vital educational functioning? Stated differently, what administrative procedures and relationships facilitate adjustments to changing conditions?
2. How do administrators prevent a bureaucracy required to maintain the functioning of a large and complex organization from interfering with intellectual creativity which is at the heart of the educational enterprise? Must increased formalization of relationships and procedures curtail the individual freedom implicit in teaching and scholarship?

Changes are called for, obviously. It is the function of administration to provide the initiative for change. A refinement or reorganization of our administrative arrangements and personnel is apparently required if the administrator is to become an instrument in change.

To fashion such an instrument, facts and figures need to be assembled; the experiences, insights, new ideas, and theoretical postulates of creative administrators need to be examined. "Break-through" concepts in the field of academic administration are required.

Plan for Study of Administration: The Scope of This Report

The report to follow will survey what is being done to increase our knowledge of administrative procedures and relationships as they

involve boards, presidents, and general administrative officers. The focus is upon the administration of a college or a university as an entity.

Sources of Information

Preparation of this report has involved a survey of the literature and of administrators and scholars to identify current studies and thinking upon these problems. Organizations especially concerned with systematic investigations into these matters include: The Southern Regional Education Board; The Administrative Science Center at the University of Pittsburgh; the Midwest Administration Center at the University of Chicago; the University Council for Educational Administration; Centers or Institutes for the Study of Higher Education at the University of California, the University of Michigan, and Teachers College, Columbia University; and the office for the Study of the College and University President in Princeton, N.J. The material to follow reflects the activities of these organizations as well as the individual efforts of a number of other scholars and administrators. The literature since 1953 has also been reviewed.

Specific references will be cited briefly so that they can be identified in the list of references at the end of this report. Again, it should be stressed that the material included is an illustrative, rather than a complete, listing of pertinent studies and publications.

Categories of Investigation

In general, the work underway or published in recent years can be considered under three general categories. These categories obviously do not provide the only possible structure for a report of this kind. They do suggest a logical organization of the material considered and a general conceptual scheme for further study which can serve to coordinate the work of individuals and offices toward improvement of academic administration.

The first category is that of *theories* of administration. Business management and governmental bureaucracy have established precedents in a body of theory. Only in recent years have educators and social scientists begun to develop postulates for the administration of schools, colleges, and universities to serve as guides to practice.

A second category consists of studies and writings which deal with the *analysis* of administrative processes, organizational relationships, and their institutional environment. Examples are the concept of decision making and what it encompasses, analyses of colleges and

universities in terms of formal and informal structures, and the roles of units in academic government.

The third category is that of *application or operation*. Self-surveys, experimental programs, institutional research, and similar activities illustrate the procedures employed to obtain the information needed for intelligent operation. By gathering data about a specific institution or comparable institutions, analyzing and communicating such data to appropriate administrators, provision is made for more effective decision making. A steady accumulation of such material—formally through studies and reports, and informally through personal associations—is the basis for the improvement of individual colleges and universities.

This report will examine each category in turn.

SEARCH FOR ADMINISTRATIVE THEORY

CATEGORY I

AS ADMINISTRATORS and students of administration address themselves to the problems of the academic enterprise, they will accumulate not only an increasing body of data but a sound basis for generalization. Inevitably this generalization will lead to sharper definition of problems as well as hypotheses likely to improve understanding and prediction of administrative processes.

The literature in other fields such as public and business administration (as evidenced by such "classics" as the writings of Mary Parker Follett, Luther Gulick and L. Urwick, Max Weber, Chester I. Barnard, and Herbert A. Simon) indicates that such a development can be expected. It is equally clear that, in the last few years, students of educational administration have seriously begun the work of formulating a body of theories for such administration. Two recent publications illustrate this development. Both propose definitions of administrative theory, and both describe a number of new theoretical propositions.

In a short book *Administrative Theory*, published in 1959, Daniel E. Griffiths has written what he calls "an interim statement setting forth the understanding we now have" of administrative theory and has discussed recent attempts at theorizing in administration.¹

In 1957, the Midwest Administration Center at the University of Chicago held a seminar for 60 professors and deans to consider this problem. Out of this meeting has come a report, *Administrative Theory in Education*, edited by Andrew W. Halpin. The report includes eight papers on the development of theory, the relationship of theory to practice, and new approaches to the study of theory.

Both publications are allied to the work of three national organizations: The National Conference of Professors of Educational Administration (founded in 1947), the Cooperative Program in Educational Administration (founded in 1950 with Kellogg Foundation support), and the University Council for Educational Administration (formed in 1956 with Kellogg Foundation financing).

¹Also included in a second publication by Griffiths, *Research in Educational Administration*, Bureau of Publications, Teachers College, Columbia University, 1959.

Other pertinent articles have appeared in the *Administrative Science Quarterly*, published by the Graduate School of Business and Public Administration at Cornell University.¹ The Administrative Science Center of the University of Pittsburgh, with a staff including sociologists, social psychologists, and anthropologists, has advanced hypotheses which have significance for higher education. A number of behavioral scientists—among them Ralph W. Tyler, David Riesman, Theodore Caplow, and Talcott Parsons—also have proposed theories on administrative relationships.

A distinctive concern of these contemporary writers is the note of universality. Theories which explain how human beings are organized to carry out identifiable organizational functions can apply to a high degree in all kinds of enterprises, although they may be derived from a single one.

What Is Theory?

Gulick and Urwick and other early writers conceived of a "science of administration" almost purely in a taxonomic sense. More recent theorists have placed greater emphasis on methodology having its basis in the findings of the social and natural sciences. They have relied upon mathematical and statistical tools; they have attempted to establish carefully defined concepts to describe situations in operational terms and to establish an accurate language; they have sought to develop hypotheses gained from observational, statistical, and other data. They have sought to make it possible not only to understand the administrative process better but to predict consequences of decisions. Professor Griffiths, for example, has proposed four purposes of theory: (1) as a guide to action and the "consequence of action"; (2) as a guide in the collection of data through a clear perception of the relationship of facts; (3) as a guide in the accumulation of new knowledge; and (4) as a guide to the "nature of administration" in terms both of its structure and its function.

But hypotheses of any kind are not only developed from other concepts or hypotheses but must ultimately be tested in situations where it is possible to observe outcomes. At the point at which a hypothesis predicts an operational consequence, its validity undergoes that test. Theory for educational administration, as distinct from that for administration in general, must be validated by observed (and if possible measured) results of application in educational institutions.

¹ *Public Administration Review* (Winter 1960) includes several related articles.

What Hypotheses Have Been Proposed?

Administrative theory is concerned with human behavior in an organizational setting. Phillip Selznick writes in his 1957 book, *Leadership in Administration*, that "the technical, rational, impersonal, task-oriented formal system (the organization) is conditioned by responsive interaction of persons and groups."³ This responsive interaction, he says, in time becomes a social structure. This structuring is historical in that it solidifies in terms of the experience of a particular organization; it is functional in that it reflects the adaptation of the organization to internal and external social environments; and it is dynamic in that it generates new and active forces from the actions and reactions of its constituency.

What do we know about how people act in formal organizations? What hypotheses attempt to portray accurately the elements essential to the formal structuring of relationships of individuals and groups to achieve a functioning organization? What hypotheses explain and predict the behavior of individuals in their relationship to the organization or the behavior of people as members of formal and informal groups associated with an organization? What attempts have been made to develop a general conceptual scheme for a theory of formal organization?

The Griffiths and Halpin references mentioned above contain some of the answers proposed for these kinds of questions. In addition to establishing possible conceptual frameworks, each considers some of the recent contributions to theoretical analysis. This report would serve no purpose by further discussion of these at this point, except to note that other references include specific theoretical concepts.⁴

It suffices to say here that theoretical studies tend to concentrate around the two general topics of process and sociology.

³ *Leadership in Administration*, Rowe, Peterson, White Plains, New York, 1957, p. 38.

⁴ For example, Theodore Caplow, in an article in *Social Forces* in 1953, proposed the following hypotheses: "A social organization, being an entity with definite structural characteristics, can only continue in existence if certain invariable requirements are met. These requirements consist of those imposed by the resistance of the external environment to the objective goals of the organization, those created by latent or manifest conflict among the component suborganizations, and those imposed by individual members as a condition for continued participation. A successful organization is one which shows, for its institutional type, a minimum of inconsistency among these purposes, so that the effective achievement of organizational goals contributes to the self-maintenance of the group, the minimization of spontaneous conflict, and the satisfaction of individual needs."

In a more recent unpublished paper, James D. Thompson proposed an analysis of academic relationships in terms of "truth strategies." His point is that the various disciplines in general rely on a combination of two elements: experience and reasoning. Academic disciplines can be categorized by the degree to which their reasoning is codified. Their personnel, their curricular content and structure, their relationships to other disciplines relate to these factors. Thompson suggests that evidence assembled and analyzed in terms of this *might* shed new light on higher education.

The theories of Talcott Parsons, Herbert A. Simon, Daniel E. Griffiths, and Edward H. Litchfield emphasize the administrative process. Parsons, for example, explains the relationships of what he terms the three different levels of the organizational hierarchy: the overseers or boards or similar top structure, the managerial group in general control, and the technical personnel who know the specific operations of the organization. The hypotheses of Simon, Griffiths, and Litchfield point to decision making as the fundamental activity of administrators.

The other general basis for theorizing can be called organizational sociology. In 1956, Talcott Parsons wrote two articles for the *Administrative Science Quarterly* which he entitled "Sociological Approach to Theory of Organizations, I and II." In these articles he sought to examine organizations—business, military, and academic—in terms of general sociological theory. In a report of the American Council on Education Conference on Faculty-Administration Relationships in 1957, Ralph W. Tyler discussed a few developments "to illustrate the relevance of the behavioral sciences to an understanding of the problems of relations between faculty and administration." In a paper on *Administration Theory in Education*, Jacob W. Getzels stressed the importance of role and personality "to show that the process of administration deals essentially with social behavior in a hierarchical setting." In the same volume, Carroll L. Shartle proposed "a theoretical framework for the study of behavior in organizations." His paper grew out of the concepts and findings of the Ohio State Leadership Studies at Ohio State University.

This stress upon the roles and relationships of people as individuals and as groups is held also by other writers. James I. Doi, director of institutional research at the University of Colorado, for example, in a letter to the author stressed the importance of investigation based on a conceptual framework involving the roles and role expectations of participants. The Administrative Science Center at the University of Pittsburgh is concerned with analysis and theory of administration based upon the social sciences. At Harvard University and at the Center for the Study of Higher Education at the University of California, studies are underway to interpret the impact of the college upon its students. Peabody College has been concerned with hypotheses based upon the factors of competency in performing administrative tasks.⁵

⁵ A number of scholars have developed their theoretical analysis in terms of statistical methodology. This is also characteristic of the Ohio State Leadership Studies.

Significance of Theory for This Report

This brief discussion of administrative theory serves only to identify a potential scope for investigation of academic administration and a kind of framework which can evolve as conceptual thinking expands in the future.

Whether the element of prediction of administrative behavior will reach a degree of effectiveness where it can guide educational decision making remains a moot point. But there is clear evidence to this writer that the present and past concentration on data accumulation for operational decisions will not suffice. Such investigation must not only continue but expand, of course. It will help to overcome that famine of pertinent information which pervades the administrative land today. But more penetrating questions as to what actually occurs on a campus will be asked more frequently. Insightful answers will come only as we really begin to know what decision making and the administrative process involve, what kinds of roles and relationships account for the kinds of decisions made, what factors affect faculty morale and effective interaction among participants, and similar perceptions.

ANALYSIS OF PROCESS, STRUCTURE, AND INSTITUTIONAL SETTING

CATEGORY II

IF A SOPHISTICATED THEORY of educational administration existed, this category would conceivably serve no purpose. Theory would establish a basic conceptual scheme within which further studies would fit logically. Theory would provide, as Professor Griffiths indicated, the guide to the accumulation of new data essential for a clearer perception of the relationships and the administrative actions of presidents, deans, chairmen, and other officers.

The point in establishing this second category of studies is simply this. Theorists are concerned with hypotheses which not only explain but predict. Studies arising out of theoretical considerations tend to stress the confirmation or rejection of these considerations. In part, such also is the purpose of the studies referred to in this category. But since theory remains incomplete, studies not based upon theory remain valid. Moreover, educators facing the complexities of size and consequent problems of directing change and making bureaucracy effective in the academic setting cannot wait for the logical development of theoretical considerations.

Analysis in this category can open additional avenues for insightful excursions which broaden the perceptions of those who strive for a general conceptual scheme of administrative behavior or who seek pertinent data. There are no clear boundaries. It is a matter primarily of emphasis: the theories dwell on ideas with universal application and the potential of predicting consequences of behavior with considerable consistency; the analytical studies on clearer insights into the elements which bear upon administrative action with or without a theoretical premise.

To look at this matter from another perspective, studies and data accumulation to meet the immediate problems of administrative operation do not produce sufficient insights into the more basic factors inherent in academic institutions. Students of educational administration have begun to seek more meaningful insights into organization, structure, and institutional setting.

Proposed below are three areas which call for analytical study. First, however, it is necessary to establish three operational definitions

for administration, organizational structure, and institutions. These comprise the aspects of college and university administration with which this study is concerned. Our definitions are intended only for the purposes of this paper.¹

Administration.—By "administration" we mean activity or process. Specifically, administration refers to the activity in a university and college by which decisions are made and implemented, policies formulated and communicated, and routine processes carried on. Stated somewhat differently, it is the activity by which policy is formulated and the functions of the institutions maintained.

Organizational structure.—By "organizational structure" we mean the formally established roles and relationships and the duties, responsibilities, and authorities of governing boards, presidents, and their executive staffs,² academic deans, department chairmen, and faculties. Not included are the informal relationships which surround and influence the formal structure.

Institution.—By "institution" is meant that identifiable entity—both physical and organizational—which encompasses the various participants in the performance of established functions. The reference here is to a college or a university as an established and widely recognized enterprise.

Areas for Study

An organization is an arrangement, an ordering, of the parts in a whole. The composition of these parts—trustees, presidents, deans, chairmen, and faculties—and their interaction determine to a large extent the effectiveness of the administrative process. For effective administration, participants need to determine clearly the relationships of the parts and to establish administrative policy and base decisions on an accurate estimate of these relationships.

As institutions become larger and their functions more diverse, the structure becomes more complex. One need only compare the relationships and consequent bureaucracy to be found in a modern State university with the informal situation which characterizes a small liberal arts college. It has become not only increasingly clear

¹ Until clearly phrased and generally accepted definitions have been established, variations in the use of such terms will exist. For example, Albert Lenowsky (*Administration*, Knopf, 1955) distinguishes between administration, management, and organization. He defines organization as a process "combining the work which individuals or groups have to perform" (p. 35). In his book, *Administrative Theory*, Griffiths, in part, defines administration as a "process of directing and controlling life in a social organization" (p. 72). As studies accumulate, consensus definitions of these and other such terms undoubtedly will evolve.

² This category of "staff" includes not only assistants working directly with the president but the central administrative officers such as deans of students, registrars, directors of admission, business officers, and others concerned with the nonacademic operations. Some universities have centralized their operations under a limited number of heads or vice presidents; i.e., academic vice president, financial or business vice president, public relations vice president, and student personnel vice president. In terms of academic government, however, the last three usually report directly to the president and have a hierarchical relationship to him, while deans, chairmen, and other officers related more directly to the academic functions have a generally recognized autonomy.

but increasingly imperative that participants in the academic operation have a clear understanding of the organizational structure of their institution.

Both process and structure are related to institutional setting. This constitutes what John J. Corson has called the "ecology of governance." The influence of external and internal pressures³ comes to focus in the decision-making activity which constitutes the administrative process. This, combined with formal roles and relationships of participants, determines the character or "personality" of each institution and thus influences the kind of educational program it will have, the services it will perform, the character of its personnel, and the other determinants of its role in society.

It would seem then, that an understanding of administration in higher education requires analysis of each role of the three elements:

- (1) *Administrative process*: What elements are involved in the making and implementing of policies and other decisions?
- (2) *Structural relationships*: What are the roles and relationships of administrative officers and bodies? What influences do various governing units have on institutional policies? What is the "flow of authority" in academic administration?
- (3) *Institutional setting*: What influences do informal groups and personal relationships have on administrative decisions? What influences in academic organizations limit or foster possible courses of action? What patterns of values permeate the professional personnel of colleges and universities and influence decision making? What external pressures influence the making of decisions?

Administrative Process

In the small college enrolling a few hundred students and having few faculty members and administrative officers, face-to-face contacts provide opportunities for the exchange of information and opinion necessary for effective operation. In many small colleges, grown to medium size since World War II, these informal processes collapse. If formal arrangements are not substituted, the void is not filled and the administration of the college suffers.

How many colleges today—faced with a growing bureaucracy of administrative offices and services—systematically analyze their situation to develop new administrative arrangements? If they do, what basis do they have for making decisions concerning their administration and organizational structure, other than that which seems to work

³ These pressures come from a variety of elements. Among external influences are professional and accrediting associations, parents, alumni, donors, and governments. Internal factors include values and allegiances held by individuals to professions, academic disciplines, informal groups, and the institution; formal roles and relationships, traditions, commitments to educational functions and services, students, and other influences.

well somewhere else? Is there a value to a careful and logical analysis of the administrative process? Can such analysis have application to a local situation and assist in the ordering of new arrangements which help rather than hinder intelligent and effective decisions on purposes, curricula, degree requirements, research activities, instructional effectiveness, evaluation methods, and the other factors in educational operations?

Little study has been made of these problems. Chancellor Edward H. Litchfield of the University of Pittsburgh has studied some of them and proposes that the administrative process may be viewed as a five-stage cycle. In brief, he indicates that rational administrative process involves (1) the making of decisions which (2) are programed into a plan for implementation and then (3) communicated along with the programing to all participants concerned, (4) controlled so that actions implementing them are measured in terms of established norms, and (5) reappraised on the basis of changed conditions, new information, etc.

Litchfield's analysis appeared in 1956 in the *Administrative Science Quarterly*, while he was dean of the Graduate School of Business and Public Administration at Cornell University.⁴ In articles published in the October and December 1959 issues of the *Journal of Higher Education*, he has applied this analysis to the organization of large universities.

Obviously, administrative process does not always move through all of Litchfield's five stages. The process of decision making may include arrangements for programing; programing may lead to immediate reappraisal of the initial decision; communicating may bring to light factors which cause an immediate reappraisal.

Other writers have proposed similar patterns. The proposal of Chancellor Litchfield, however, constitutes the kind of analysis that is valuable in the study of administrative organization. It is an effective device which forces the decision maker to think through what is involved in a decision, what actions should follow its making, what kinds of data should be considered, and what persons should be involved. It establishes a basis for further study of the elements of administration.⁵

Academic administration is, however, more than just a cycle of activities. To a far greater degree than in public or business administration, it requires effective collaboration among the professional

⁴ Litchfield's initial proposal was in the form of a hypothesis to explain the administrative process. As such, it relates directly to theories of administration developed in connection with process and decision making. It also forms a basis for analysis, and therefore has a value to students of administration other than as a part of administrative theory. It parallels other studies discussed under this category.

⁵ Another breakdown of the process of making and implementing decisions for educational institutions is presented by Griffiths in *Administrative Theory*.

personnel of the institution. D. C. Stone, writing on the relations of presidents and faculties, notes that "administration is, in reality, more a process involving a considerable number of persons who are accountable for various phases of college operations. Its essence is responsible leadership acting through consultation."

Investigation of this aspect of administrative process could productively consider such questions as: To what degree does experience in, and knowledge of, public and business administration provide data, procedures, and insights of value to colleges and universities? To what degree is the academic problem unique? How should faculties be involved in the administrative process? How can policymaking and policy implementing be related to the advantage of both? What controls are effective in the autonomous, decentralized structure of the modern university? How can appraisal be made an integral part of decision making and the routine administrative process?

Structural Relationships

No president or other administrative officer survives long or wields effective control who fails to understand the varied interactions among the units of academic government. Yet, as noted on the pages to follow, little has been done to investigate systematically the formal roles and relationships of administrators in colleges and universities. Nor have extensive systematic analyses been made of the informal roles and relationships described in the following section on the institutional setting.

An experimental view of higher education readily reveals a common pattern of organizational structure for nearly all institutions. Governing boards hold final, legal authority. Presidents tend to serve in a dual relationship as executives for boards and leaders of their faculties. A power flow routes executive authority from presidents through deans and departmental chairmen to faculty members, on the one hand, and legislative initiative moves from individual faculty members to departmental, school, or college faculties to institutionwide senates, councils, or faculty meetings for educational policy, on the other. Because the professionalized personnel of departments are committed to specialized disciplines, departments play a highly autonomous role within the organization.⁶ The executive direction of a college, accordingly, does not have that "down the line" authority associated with the administration of business and government. Decisions at the departmental, school, or college level—especially those which deal with the employment and advancement of personnel—tend

⁶ In this sense, professional schools tend to act in the same manner as academic departments in the arts and sciences.

to reflect commitments to disciplines and professions rather than to the policies of the institution.

Individual colleges and universities, of course, differ in the authority and responsibility held by various units of academic government. Local traditions, local functions and purposes, geographical location, relations with supporting governments and donors, student clientele, attitudes, values and capabilities of individual participants, and similar elements combine to give each campus a particular pattern of authority and of relationships. In some institutions presidents serve as highly authoritarian executives; in others, they find it difficult to exert educational leadership because their faculties are highly independent and autonomous. That such problems concern administrators is made clear at professional meetings attended by board members, presidents, academic administrators, and faculty members.

Despite this expressed concern, investigation disclosed relatively few studies which focus on the problems involved. Those which do are for the most part inchoate and uncoordinated. From the limited data available, it would appear that two kinds of studies would be very profitable. One would examine the roles, responsibilities, and authorities of individual units of government. The other would study academic organizations as total structures.

An encompassing examination of both of these elements is reported in an as yet unpublished report to the Carnegie Corporation written by John J. Corson. Corson has identified "the distinctive characteristics of the university as an administrative enterprise." In terms of these distinctive characteristics, he has analyzed the functioning of universitywide officers (trustees and presidents), functioning of academic officers (deans and chairmen), and the functioning of faculties. He has raised questions which, if examined, would provide administration with a literature.

Corson's ideas are basic in any systematic investigation of the problem. Still other studies indicate what is underway and what can be done.

Studies Illustrative of the Research on Organizational Structure

The task of the president as the executive for a university with thousands or tens of thousands of students and hundreds or thousands of professional personnel is proving increasingly onerous and demanding. Presidents are both verbal and well connected; so it is not surprising that one comprehensive study is underway on the problems of this office. With the support of the Carnegie Corporation, Harold W. Doods, former president of Princeton University, has carried out

with a team of 3 an inspection of 50 colleges and universities. His group is analyzing the role of the president as educator, administrator, fundraiser, and interpreter of his institution. It will produce a body of organized information based upon observation and—to a lesser degree—on statistical data. Some clue to the direction further research on the presidency might take is found in a doctoral thesis completed in 1956 by Richard W. Stephens. In what he calls a "content analysis" of personal documents and published materials written by or about the present and former presidents of 45 major American universities, Stephens has put together an overview of presidential functions and relationships.

In the academic hierarchy, trustees are plagued by the fact that they have full legal responsibility but limited operational control. A comprehensive account of the legal basis for the control of boards may be found in the 1935 American Council on Education report written by Alexander Brody, *The American State and Higher Education*. Most publications on the role of trustees have tended to be handbooks such as the *Manual for Trustees* prepared in 1945 by Raymond M. Hughes. One of the most penetrating of these handbooks was published this year by Morton A. Rauh under the sponsorship of the Institute for College and University Administrators at Harvard University. Rauh discusses what he considers to be the vital areas for effective board participation in academic government and suggests areas that require further study.

No study, however, is apparently underway that might suggest what can be done to meet the pressing need for ideas and data which can help boards and college presidents clarify the role of trustees. This need was stressed in the 1957 "Paley Report," *The Role of Trustees of Columbia University*, by a committee of trustees. The problem raised by this committee, in essence, is: How can trustees carry out their public responsibility of supervising their institutions when they are substantially or almost completely separated from the paramount function of their organization, its educational program?

Since the history of the last hundred years of American higher education has been one of decentralized expansion, the roles of deans and departmental chairmen have become increasingly crucial. Three studies show the kind of investigation which can help identify more clearly the place of departmental chairmen in the hierarchical structure and the kind of evaluation which might be applied to their functioning. No similar studies apparently have been made for academic deans. In 1953, Rev. Edward A. Doyle surveyed 33 colleges to determine how the work of departmental chairmen was divided among instruction, advisement, student affairs, and general administration. In a different vein, John K. Hemphill (Ohio State Leadership Studies) analyzed statistically the replies of more than 200 faculty

members concerning the reputation of departments and the relationship of these replies to the effectiveness of departmental leadership. Ben Euwema, in a 1953 article, examined departments in terms of optimum size, selection of chairmen, internal organization, and personnel policies.⁷

Because graduate and evening deans are relatively new on the academic scene, their position in relation to other academic officers has caused them concerns not so common to the more traditional officers. The Executive Committee of the Association of Graduate Schools in the Association of American Colleges, in the report of a 1957 questionnaire filled in by 36 out of 38 member institutions, gives data on prevailing practice as related to jurisdiction, responsibilities, and influence of these officers. A more insightful study was made by a committee of the Association of University Evening Colleges in 1954, but was never published. This group sponsored a personal interview survey in eight representative institutions to determine how the role and function of the evening administration was viewed by other academic deans.⁸

The role of faculties in university governance has long been subject to considerable discussion, usually quite partisan. The prerogatives which faculties should hold received the most careful enunciation in the well-known "Committee T" report of the American Association of University Professors. This analysis considers the rights of faculties rather than their role in institutional policymaking. Charles P. Dennonson came closest to this latter perspective in his 1955 book on the formal authorities of faculties, which reported a survey of the statutes of eight liberal arts colleges. He found, for example, that while only two colleges provided explicit faculty authority in academic matters, all respected the faculty voice in practice.⁹

Limitations of Available Material

The studies consulted for this survey have begun the essential task of accumulating data, but do not answer the basic questions.

How, for example, does the administrator overcome resistance to educational experiment? Do departments act as "veto groups,"

⁷ A study more directly related to the roles and relationships of chairmen in an organizational sense has been proposed by the University of Massachusetts. Dr. Shannon McCune, provost at that institution, seeks to analyze the problems of departmental structure and role within the context of the educational functioning of Smith College, Mount Holyoke College, Amherst College, and the University.

⁸ Ernest E. McMahon, dean of the University College of Rutgers University, this year completed a thesis entitled, "The Emerging Evening College: A Study of Faculty Organization and Academic Control in 10 Eastern University Evening Colleges" (Columbia University, 1959).

⁹ A new doctoral thesis by K. William Leffland on "The College Administration and Faculty: A Study of Administrative Functions and Roles" may shed further light on the possibilities of studying the faculty role in academic structure.

analogous to political and social groups in society, as David Riesman reported in *Constraint and Variety in American Education*? Does their commitment to the existing structure and organization of knowledge mean they act to prevent new disciplines from evolving, to impede efforts to reorganize the curriculum in terms of contemporary knowledge, and to oppose changes aimed at better realization of institutional purposes?

How do we determine not only the existing role but the appropriate role for the individualistic, professional academician in the increasingly management-oriented administrative organization of a large university? How can these two conflicting tendencies—the important creative individualism of the faculty member and the essentially bureaucratic administrative arrangements—both be enhanced?

What kinds of decisions can the faculty be authorized to make without abridging the responsibilities of the trustees and the president for executive leadership and societal responsibility? What kinds of decisions do faculties have special competence to make? What limits should be placed on the participation of faculties in institutional decision making? Conversely, how can faculties make sure that administrators carry out the policies faculties adopt in areas where they have competence? How does the faculty governmental system of committees, departmental meetings, councils, senates, and faculty meetings mesh with the parallel administrative hierarchy of chairmen, deans, and presidents?

Pattern for Analysis

The foregoing discussion suggests three factors important for further investigation and some questions which illustrate the kind of study most likely to be productive.

1. The academic organization has a large number of unique characteristics which Corson identifies in his forthcoming report. Roles and relationships, strongly felt intellectual values, character of professional personnel, and other aspects of academic institutions comprise a distinctive situation. Structural patterns for other enterprises do not always suggest answers, nor sometimes even valuable ideas. This is a point not always recognized by governing boards and presidents.

A clearer understanding of these differences will open up a very productive area for research, as Caplow and McGee imply in their recent book:

The university is a fascinating specimen of social organization, remarkably unlike any other. Its roots and some of its rituals go back to the Middle Ages and beyond, but its principal business is innovation. Its hierarchical

arrangements are simple and standardized, but the academic hierarchy includes a greater range of skills and greater diversity of tasks than any business or military organization. Above all, the university is remarkable for pursuing an intricate program with little agreement about fundamental purposes.¹⁰

2. The flow of authority from governing boards to administrative officers and faculty bodies contrasts and even conflicts with the flow of initiative from department chairmen and individual faculty members. This contrast in power from legal authority as against that from control of initiative shows up most dramatically in decisions on educational program and selection of faculty members.

James D. Thompson at the University of Pittsburgh has made a preliminary analysis of this contrast or conflict of what he calls legal as against inherent power. Legal power grows out of the responsibility of governing boards to the larger community and their position as custodians of their institutions. They delegate this power to presidents and administrative staffs for the executive direction of colleges and universities and, frequently, to faculties for the approval of educational programs. Inherent power rests upon the experience, the talents, and the occupational genius employed in the pursuit and propagation of knowledge. Faculties monopolize the necessary understanding of the subject matter and contacts with others in "the field" and thus make the decisions which shape the academic functions of their institutions. This knowledge, with subsequent initiative in proposing new faculty members, curricular changes, and similar matters, blunts the force of executive authority from boards and presidents.

The effective functioning of an institution depends upon a realistic understanding of these two powers. Does the president act, for example, as Hutchins has suggested: "more like a political leader than any other kind of administrator," but lacking the power of party and patronage?¹¹ Will faculty bodies, representing as they frequently do a status quo position in knowledge and academic organization, initiate the kind of creative educational programing and scholarly production essential for continued institutional vigor in a changing environment? On the operational side, does institutional structure provide for that essential coordination between educational and financial decision making which assures appropriate support for academic programs? More specifically, do curriculum committees coordinate their policy decisions with those of budget officers, and vice versa?

3. A greater degree of decentralization has accompanied the growth of universities than that of other enterprises. What is more, this has taken place largely without what Selznick called the indis-

¹⁰ Caplow and McGee, *The Academic Marketplace*, Basic Books, 1958, p. 4.

¹¹ Hutchins, Robert M., *Freedom, Education, and the Fund*, Meridian, 1956, p. 168.

pensable homogeneity of well-understood and widely accepted institutional policies. Participants in university administrative processes tend to lack a general orientation to institutional purposes and functions.

Study aimed at improving the effectiveness of academic administration must grapple with this problem. If departments are to remain the basic administrative units, for example, how can their decisions become actively related to institutionwide policies? Or, should schools and colleges rather than departments serve as the basic units for carrying out institutional policies?

Fundamental even to this is the relationship between organizational decentralization and the kind of scholarly inquiry accepted as vital to higher education. Is the present structure the best kind to support the intellectual freedom of individual faculty members? To date, little effort has been made to relate the structure of universities to their functions, and particularly to their basic and most important function of creative teaching and scholarship.

Questions for Further Study

Consideration of conditions essential to the contributions of teachers and scholars suggest a number of questions for further study.

1. What is the nature of educational leadership? How can presidents and other administrators gain adherence to institutional policies without transgressing on disciplinary initiative? Does executive ability in colleges and universities differ from that in other enterprises?
2. How can the kind of decentralized organization associated with intellectual freedom be maintained while institutions achieve a higher degree of efficiency and a greater effectiveness in performing appropriate functions? What means can serve to coordinate units of governance: to involve members of boards, for example, actively in academic matters; to coordinate faculty decisions with administrative implementation; to gain departmental cooperation in selecting the kind of instructional staff needed for the primary teaching or research functions of the institution? In effect, how can academic personnel become sensitive to the importance of adequate communication and to the functioning of the total organization?
3. What should be the basic administrative unit for academic areas? Does the department serve this function best and, if so, how can a great many individual departments be coordinated in terms of institutional policies? Should colleges or schools serve as basic units—as they do for many professional areas—rather than departments?
4. Does what Max Weber calls the power of bureaucracy, which rests upon its monopoly of specific knowledge, apply to universities to the extent that this sets limits on the degree to which presidents and administrators can effectively exercise direction?
5. Does the typical president, concerned with his lack of power to initiate, underestimate his total influence on the organization? Conversely, does the faculty, fearful of retaliation in terms of compensation and promotion

- and cognizant of the threat of administrative veto, underestimate its position to direct policy decisions?
6. How can the office of the president as the center of both horizontal and vertical communications effect better coordination of all units of governance?
 7. Would clarification and standardization of titles and roles of administrative officers, especially of deans, help to effect a better administrative organization within and among universities?

Institutional Setting

The administrative process and the relationships inherent in the institutional setting undoubtedly have much in common with their counterparts in other organizations. This report, however, is intentionally limited to academic organizations. The potential for, and the limit upon, achievement is clearly established by the nature of the academic institution in which the process and structure is established. This institutional setting has two components, each of which reflects the other.

One consists of the interaction of attitudes and values, personalities and abilities, and other aspects of the participating individuals and groups as evidenced in the purposes, functions, and internal patterns of relationship. Corson has called these the internal pressures on decisions.

The other consists of the external environment—primarily societal but also geographical and physical—within which the institution is set. In one sense, this external environment determines in part the nature of the student body, the character of the educational program, and the kind of faculty it is possible to attract. Unquestionably, to illustrate in an extreme sense, the centrally located rural university and the smalltown liberal arts college differ from their city counterparts. But more than this an institution which relies upon society—in one manner or another—for its support must keep pace with basic developments in this society. "If the college were wholly alien to its environment," Henry Wriston writes, "it could not perform its functions. . . . On the other hand, if it yields completely to its environment, it equally fails in its objectives. It must maintain a realistic contract without compromising its essential function."¹²

The pattern of the relationships within an organizational structure and the interaction of that structure with its environment can be explored in terms of the internal and external pressures on the administrative decision-making process. Corson has demonstrated the

¹² Wriston, Henry M., *The Nature of the Liberal Arts College*, Lawrence College Press, 1937, p. 20.

possibilities of this approach.¹³ Some pressures support the existing situation; others exert influence for change. In the continuing succession of decisions through which an organization operates and in terms of the relative strengths of the various pressures, the character of an institution evolves or fails to evolve. This character, in turn, becomes identifiable with a college or university and becomes a positive factor itself in the determination of the activities of the organization. Over the years, this character takes recognizable shape as the cultural tradition which epitomizes a particular university or college.

An understanding of both the opportunities and limits in the character of the institution can give the administrator a realistic sense of his leadership potential. On a broader basis, this understanding gives deeper meaning to administrative process and structural organization. It is proposed here that such opportunities and limits be investigated more fully than has been done. Indicated below are the kinds of investigations currently available and the possibilities for further research they present.

Current Findings

One major contribution to the analysis of institutional setting is contained in Corson's report mentioned above. In this, he examines what he calls the "ecology of governance"—the external forces which help or hinder the college and university decision makers in adapting curriculums, courses, and instructional methods to the changing needs of society and young people. He contrasts the pressures of parents, alumni, contract research agencies, governments and governmental bureaus, professional associations, accrediting organizations, and individual and corporate donors. He indicates the dual effect of these external pressures and the internal forces which reflect the attitudes, values, and beliefs of the participants within an organization. To a degree the external forces tend to exert pressure for changes, the internal for the integrity of existing purposes and functions.

Both combine, writes Corson, to compose the institutional character, "le force majeure in governance." He adds: "Several scholars have demonstrated effectively that while rational or logical decision-making processes represent the ideal for any organization, the ideal is not often attained. . . . For decisions are, in considerable part, the result of conflict between tradition and the demand for change. They are the product of friction between contrasting philosophies. They are distilled from the currents and countercurrents that stem from the ambitions, anxieties, strivings, and resistances of individuals within and forces from without the institution."

¹³ In his yet unpublished report to the Carnegie Corporation. See "References."

Another basis for analysis of institutional setting rests on the findings of behavioral scientists. Logan Wilson, in his 1942 book, *The Academic Man*, suggested the value of this kind of study. Tyler, in his paper¹⁴ which pointed out how studies by behavioral scientists might apply to higher education, commented that what these disciplines¹⁵ "can offer at present are methods and concepts useful in analyzing the situation in colleges and universities and generalizations drawn from other contexts." He proposed studying the behavior of faculty members and administrators viewed both as adult individual human beings active in a social context and as members of small groups. He also suggested study of the effects of the several kinds of social mobility which occur on campuses.

Two articles survey the literature which might be relevant for colleges and universities. One, by W. W. Charters, Jr., in 1952, lists a number of references which study roles of participants in an organization, leadership and authority relations, problems of communication, mobility of personnel, and influence of small groups. In the other, F. Stuart Chapin surveyed pertinent material as of 1957 under the headings of institutional change, relationship of change to individual needs, "the problem solving sequence" which considers the role differentiation among participants in making decisions, status in relation to institutional structure, and finally the relationship of size to effectiveness of committees.

Examples of the kinds of study which might have value are limited.¹⁶ Two doctoral theses have dealt with phases of the problem. In 1951, Robert H. Kroepsch submitted a dissertation which demonstrated the effects upon morale of the difference between what faculty members expect from the institution and what they feel they actually obtain in terms of working conditions and relationships. In 1958, Richard R. Taylor completed a study of "The American University as a Behavioral System." He examined the "decision making patterns" of 30 academic departments in five major universities to gain insights into the effects of morale, size, and distribution of esteem within departments. His findings, however, were inconclusive, except to recommend further study. His thesis does help to define the problem.

¹⁴ Ralph W. Tyler. American Council on Education 1957 Conference on Faculty-Administration Relationships mentioned in category I above.

¹⁵ These usually include anthropology, political science, psychology, social psychology, and sociology.

¹⁶ This survey disclosed other doctoral theses which suggest fruitful types of research. A number of these are listed in an appendix to this report. Review of this kind of research reveals that work done in other areas can provide illustrations of valuable approaches to a better understanding of the college and university setting. A thesis by Mary E. Weibert Goss entitled, "Physicians in Bureaucracy: A Case Study of Professional Pressures on Organizational Roles" (Columbia University, 1959), examines a situation similar to the relationship of faculty members with professional associations and with their colleagues outside their institution.

In this connection, Reece J. McGee's thesis ("A Study in Ambience: The Numerical Analysis of Interaction Groupings in a Large Scale Organization," University of Minnesota, 1956) affords another illustration.

At this time, however, we do have evidence that some systematic study of the college and university field is under consideration. Tyler reports that the Social Science Research Council in 1955 "sponsored several memoranda outlining possible research programs for the study of higher education as a social institution." The American Sociological Society published in 1958 for the Russell Sage Foundation a report by Orville Brim, *Sociology and the Field of Education*. This reviews basic research studies which have employed the concepts and theories of sociology and indicates those areas of study which have been neglected by sociologists. In addition to his book on American education, David Riesman surveyed briefly what might be done in an article on planning in higher education.

One work which constitutes a major step in systematic examination of universities as social organizations appeared also in 1958. In *The Academic Marketplace*, Theodore Caplow and Reece J. McGee reported on a "study of the academic labor market." Another came out the same year as a study of "social scientists in a time of crisis," to determine the effect of the "McCarthy years" upon the faculty members most directly involved. This book, *The Academic Mind*, by Paul F. Lazarsfeld and Wagner Thielens, Jr., makes a sociological and social-psychological analysis of faculty members.

Significance for Administration

While apparently only limited effort has gone into an analysis of the academic setting *per se*, the investigations mentioned above point to a new kind of research now underway. The increasing concentration by social scientists upon the problems of organized human relationships has begun to spill over into the academic field. It suggests an approach both refreshing and meaningful to the problem of keeping institutions dynamic in a changing social order.

For colleges and universities, the study of the institutional setting affords new horizons of understanding. A number of questions will illustrate the kind of data which such study can provide.

What are the external forces which influence colleges and universities and how is their influence felt? (Professional associations, for example, not only exert pressure by inspection and accreditations but tend to set values or norms for participants within institutions.)

What internal pressures are discernible? How do these relate to the external groups? How do they exert a counterforce on some matters and augment the

external pressures on others? To what extent are internal pressures related to the formal structure, or to informal groupings?

How do the values associated with personnel in higher education differ from those in other institutions? To what extent does adherence to professional and other values interfere with intelligent decisions in terms of institutional purposes? Are values correlated with subject matter areas, informal groups, institutional purposes, professional relationships, personal insecurities, etc.?

What are the traditions associated with higher education in general and with individual institutions? To what extent do they influence decisions?

Do members of the academic profession exhibit common temperamental and psychological characteristics resulting from preference for their work, similar graduate training, and conditions of their employment such as remoteness from daily pressures of other enterprises, association with young people, and the like?

Answers to these questions will provide data for the institutional setting. Our purpose here, however, is not to analyze them but to stress their significance—to make clear that an intelligent grasp of the administrative operation needs such analysis. At any one time, decisions will be made within this framework, yet each decision will to some degree modify it. The administrator needs to understand the variety of different and sometimes conflicting or incompatible forces with which he must contend.

To this end, the character of an institution sets the boundaries within which participants may define or redefine its purposes and activities. This character is the framework for rational discussion by individuals and groups holding widely divergent values. Despite the desires of administrators, these and other pressures shape as well as conform to institutional purposes. The kind of students available will determine much of the intellectual caliber of the educational program. The sources of financial support may limit academic control of the institution's functioning. The attitudes of influential alumni may determine athletic policies. Research programs developed by Government agencies limit the kinds of contracts available to universities.

The institutional character reacts to these two major forces: (1) adherence to purposes and traditional functions, and (2) pressures exerted for and against these purposes and functions. The dynamic institution, resolving these forces in its distinctive context, will continuously evolve its particular character.¹⁷

¹⁷ One final point, relevant for future studies, is that the entity we call the institution adds up to a whole which is not only more than its parts but which has an identity of its own. Not unlike the personality of an individual, this whole, in an institution which functions vitally, continually changes. Recognition of this situation has appeared to some degree in the literature. Dean J. Douglass Brown of Princeton University has coined the term "corporate personality." Prof. W. H. Cowley of Stanford University has stated that institutions retain attitudes, behavior patterns, and possessions which constitute a culture having continuity. On the whole, however, little effort has been made to analyze the administration of colleges and universities from this perspective.

ACCUMULATION OF OPERATING DATA

CATEGORY III

HUNDREDS of institutional self-studies, dozens of experimental programs, and a large number of books, articles, and printed or mimeographed publications have recorded the operating data of academic administration. These studies are listed in books and articles and in regular publications of the U.S. Office of Education and the American Council on Education. Such sources provide the president, the board member, the finance officer, the dean with data for use in making decisions on the various operational problems and policies faced in day-to-day activity.

This report is concerned more with the new ideas. The stress here is on developments taking place which give administrators an opportunity for a fresh—and perhaps more meaningful—look at their organizations. For this operational emphasis, we can discern some new directions in administrative planning.

The most recently published plan for a creative approach to administrative and curricular reorganization was proposed by Beardsley Ruml (*Memo to a College Trustee*, 1959) for liberal arts colleges. In effect the author says: Let's take a fresh and imaginative look at the entire institution. What kind of college do the trustees, administrators, and faculty members envisage for the next two decades? What kind of salaries and services will be required to maintain a first-rate institution? What alterations of the existing educational program, physical plant, and administrative staff will enable a college administration to achieve its aims within the limitations of its anticipated income? The Ruml approach suggests a new perspective for a traditional activity: the self-study.

The Ruml book suggests a way in which college administrators, faculties, and board members can look realistically at their present and future resources and face up to the kinds of changes necessary for an effective, high-caliber educational program. It stresses a major problem in planning for higher education; namely, the difficulty of bringing into decision-making councils the important and pertinent data.

Another effort in this same direction has been underway for a number of years under the leadership of John Dale Russell. Dr. Russell, as director of institutional research at New York University, has been

working with techniques for accumulating operational data and evaluating it for administrative officers. The pattern of his method appears in his studies of State systems of higher education, illustrated by that made in Michigan (*The Survey of Higher Education in Michigan*, 1958). The important element in this approach is the establishment of continuing procedures through which accumulated data are carefully analyzed and directed to appropriate administrative offices and faculty groups in a form designed to fit their operational needs. This method differs from self-studies by maintaining a continuous flow of information which has value for continuing decisions. It relates financial direction to educational program.

At New York University, Dr. Russell's office is developing procedures for the continuing analysis of factors such as class size, instructional load, salary costs on various bases, degrees granted, clerical and supply costs, and a variety of other data. These data are used to maintain continuous planning and evaluation in the department, school, and total institution.

This type of pattern in administrative planning has appeared at other institutions. At least a dozen have formally named offices for institutional research. Comparative information should become more available systematically about class size, instructional loads, salary cost per student credit hour, degrees granted, administrative-to-instructional cost ratios, appropriate classroom sizes, maintenance and janitorial services, and the wide variety of activities which comprise the administrative operation of colleges and universities. These growing data should be coordinated on a national basis and related to the educational and research endeavor in ways which, like the Ruml report, suggest imaginative ways of improving institutional effectiveness.

An extension of this data-accumulating process to more than one institution has been announced by Earl J. McGrath, director of the Institute of Higher Education at Teachers College, Columbia University. He plans a survey of 15 liberal arts colleges to measure the proliferation of instructional units in recent years. Such study may point to ways of reducing costs and at the same time improving educational programs.

In another dimension, a 10-member research team headed by Daniel E. Griffiths and John Hemphill has created a "simulated situational test." While designed for public school administrators, it demonstrates a new instrument for accumulating operational data for academic administrators. The group has developed a standardized administrative situation—a hypothetical but very realistic school environment—into which it is placing 232 elementary school principals selected from districts throughout the United States. By means of indoctrination sessions, visual aids, printed materials of various sorts,

and other mechanisms, these administrators are faced with realistic problems requiring decisions. On the basis of their reactions, data will be developed to give a clearer definition of the administrative process and possibly a guide in the selection of school administrators.

Two other reports illustrate other methods of probing into administrative problems. One is the Purdue Rating Scale for Administrators, reported by Robert L. Hobson through the Division of Educational Reference of Purdue University. This scale gives heads of larger offices an opportunity for intelligent and critical rating of their effectiveness by members of their staff. Forms are given to subordinates who send the answers directly to Purdue University. The division then provides the administrative head with a composite and anonymous report. Under the sponsorship of the Carnegie Corporation, the Educational Testing Service in Princeton, N.J., published in 1956 a survey of college evaluation methods and needs, written by Stuit, Helmstradter, and Frederiksen. This study provides not only a comprehensive plan for evaluating various aspects of college and university operations but a guide to methods and to literature. It is apparently the most complete analysis of evaluation directed at higher education.

Relationship to Other Studies

In this category a few of the more imaginative studies have been noted. We have not considered the numerous investigations completed or underway to help individual institutions or groups of institutions accumulate data necessary for important administrative decisions.¹ Such investigations have been excluded because this survey is more concerned with new points of view. Beyond the intent of a report, however, a fresh approach is very much called for. Both colleges and universities more than ever before are up against problems which require new solutions.

The liberal arts college, for example, faces the dichotomy inherent in the coming age of what amounts to mass higher education. Will it be overwhelmed by numbers and driven to mass techniques which relegate its efforts to a position parallel to that of the secondary school today? Will an attempt to maintain distinctive intellectual integrity mean isolation from the mainstream of society and consequent withering of support and status?

Similarly, in the words of John W. Gardner, president of the Carnegie Corporation, "the role of the universities is undergoing a

¹ Examples are studies of the function of departmental chairmen proposed by the University of Massachusetts, of professional offerings by the vice president's office at Kent State University, and those listed in *Institutional Research in the West*, published in 1950 by the Western Interstate Commission for Higher Education.

remarkable change. They are being thrust into a position of great responsibility in our society—a position more central, more prominent, more crucial in the life of the society than academic people ever dreamed possible.”² How will the variety of functions, from million-dollar research projects to the education of masses of undergraduate students, be adequately maintained in these institutions? Will graduate schools be able to cope with the increasing need for advanced degrees without changes of a drastic sort in their traditional programs and methods? Can specialization of increasingly sharp proportions be maintained for undergraduate faculties without hindering the educational reorganization inherent in handling large numbers of students?

It serves little purpose here, however, to delineate the characteristics of recent and potential changes in higher education. Scholars and educational leaders have done so on many occasions. The point we wish to raise in connection with this category is the importance of *not* planning for the future entirely in terms of the present and the past as, for example, so many institutional studies have done. Just as the 20th-century university could hardly pattern its functions upon the 19th-century classical college, the higher institution of the future will need to fit an age of widespread advanced education, great and rapid scientific and technological change, increased governmental coordination and support, and the other conditions of the changing structure of American and world society.

Studies such as those mentioned above point the way to more imaginative and forward-thinking investigation. In addition, it seems a most profitable possibility to coordinate research in academic administration, such as included in all three categories of this report, so that theory and more deeply probing analysis—particularly that done in conjunction with scholars having a broader view of the total social structure—can help to identify more positively the kinds of administrative functions and problems universities and colleges will face in the future.

² Address to annual meeting of the American Council on Education, Oct. 8-9, 1953.

CONCLUSION

THE STUDIES mentioned in this report illustrate the kinds of planning currently underway for the administration of higher institutions. As stated at the outset, this listing by no means exhausts the pertinent references.

They are presented in terms of a conceptual scheme. This has the advantage of establishing potential and existing relationships among studies and publications which to date remain quite uncoordinated. While this is not the only possible conceptual structure for investigation, some such arrangement is essential to the fruitful organization of administrative research.¹

Quite obviously, the material in each of the categories might well have relevance to another. For example, Litchfield's ideas have been discussed in terms both of theory and of analysis. Some of the studies placed in the category of analysis undoubtedly have operational value. The point of the three categories in this report is primarily to suggest that scholars and administrators at work in administrative investigations generally have one of three intentions. They seek theories to improve understanding of the administrative process and prediction of the consequences of decisions. They turn to analysis to gain a broader understanding of administrative problems than immediate operational data provide and to "dig deeper" into ramifications. They face operational questions which require additional data for intelligent answers but do not necessarily require broader, more general hypotheses.

A coordination of effort in all three areas will enhance what is done in each and help to channel investigations into greater productivity. At the very least, coordination can help to prevent duplication of effort, can assure a communication of findings, and can make clear relationships between theory, analysis, and operations.

¹ Daniel E. Griffiths has published a book (*Research in Educational Administration*, Teachers College, Columbia University, 1959) which discusses the current problems of research. In this, he proposes a national plan for the development and coordination of research in educational administration.

Another set of categories for studies of administration appears in a recent article by Griffiths and Laurence Iannaccone ("Administrative Theory, Relationships, and Preparation," *Review of Educational Research*, 28: 334-357, October 1958). The authors of this article have surveyed the literature for the period from 1955 to 1958. Their frame of reference for the organization of the studies described is that of public school administration essentially, but the administrative problems and environment are similar.

This report can best be concluded by posing a question basic to the study of administration, and by referring briefly to the implications of this question.

How can effective and efficient administration be achieved in highly decentralized enterprises lacking a clearcut commitment to a set of institutional functions and containing personnel with strong commitments to ideas, values, and professional associations which transcend their institutions?

Effective administration can be defined in terms of the achievement of creative scholarship and research which is communicated through teaching, publication, and other means to students and to the public. The effective institution, in this sense, is the one which maintains the function of intellectual leadership for society.

Furthermore, colleges and universities present to administrators a set of unique difficulties. The pervading intangibility of many aspects of administration at all levels and the absence of adequate standards and methods of appraisal tend to draw a haze over the making of decisions and to destroy the clarity of issues. The intellectual insularity of the faculty, the increasing demands of their specialties, their lack of training in administrative matters and indoctrination in the purposes of the institution, and their frequent distrust of administration present barriers to effective processes similar to but more sharply outlined than those in other enterprises.

Such characteristics create for universities and colleges a set of relationships which make most difficult the kind of planning, communication, direction, delegation, supervision, and evaluation possible in other enterprises. Yet, the foreseeable demands of the future already press for substantial adjustments in function and, to a degree, purpose if higher education will retain its vigor as the intellectual spearhead of American society.

To date, however, no body of literature addressed to this problem has appeared. The need for systematic study of administration becomes increasingly urgent as the limitations of much of our administrative process and organizational structure show up in the face of demands made on our institutions by our own and other changing cultures.

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APPENDIX I

IN RECENT YEARS, a number of doctoral theses have appeared which bear upon the problems of academic administration. These constitute a good source of information. Representative titles are listed below :

1957

PHILIP BENEVENTO, *Administrative Communication: A Study of Its Relationship to Administrative Leadership*, Syracuse University.

GORDON B. CLEVELAND, *A Theoretical Analysis of Administrative Policy-Making*, University of North Carolina.

BASIL SPYROS GEORGOPOULOS, *The Normative Structure of Social Systems: A Study of Organizational Effectiveness*, University of Michigan.

REECE J. MCGEE, *A Study in Ambience: The Numerical Analysis of Interaction Groupings in a Large Scale Organization*, University of Minnesota.

ROBERT MILTON NORTHROP, *Administrative Doctrine and Administrative Behavior: The AEC Experience*, University of Michigan.

CHARLES E. SUMMER, JR., *University Education of Administrators: A Statement and Evaluation of Goals; The Development of Administrative Effectiveness*, Columbia University.

1958

GEORGE HAROLD AXINN, *The Relation of Personnel Selection and Salary Administration to Organizational Effectiveness in The Cooperative Extension Service in Michigan*, The University of Wisconsin.

JOHN LEWIS FORBES, *A Theory of Administrative Leadership for Contemporary Education*, Michigan State University.

SAMUEL MURRAY LONG, *The Coordination of Instructional, Administrative, and Student Personnel Services in Pennsylvania's State Teachers Colleges*, The Pennsylvania State University.

DAVID LOREN MCKENNA, *A Study of Power and Interpersonal Relationships in the Administration of Higher Education*, University of Michigan.

1959

MARY E. WEBER GOSS, *Physicians in Bureaucracy: A Case Study of Professional Pressures on Organizational Roles*, Columbia University.

ERNEST E. MCMAHON, *The Emerging Evening College: A Study of Faculty Organization and Academic Control in Ten Eastern University Evening Colleges*, Columbia University.

APPENDIX II

THE COOPERATION and assistance of a number of scholars and administrators actively concerned with research in academic administration has helped substantially with this report. This appendix contains a partial list of the institutions contacted. It is included here as a possible beginning for a directory of locations at which work is in progress on matters related to administration in higher education.

CORNELL UNIVERSITY. A considerable number of pertinent articles have appeared in the Journal of the Graduate School of Business and Public Administration, *Administrative Science Quarterly*.

COLUMBIA UNIVERSITY. At Teachers College, Prof. Daniel E. Griffiths and his associates have underway a number of projects related to educational administration, particularly for the public schools, and have published several books on administrative theory. Prof. Karl W. Bigelow has contributed a bibliography (*Selected Books for the College and University Administrator*, Bureau of Publications, Teachers College, Columbia University, 1958) and has under his direction a doctoral program for students majoring in college and university administration.

The Bureau of Applied Social Research of the University has sponsored studies, such as that on the sociology of medical education, which offer pertinent data and ideas.

HARVARD UNIVERSITY. The Institute for College and University Administrators is concerned primarily with assisting individuals to better understand and perform their work by means of conferences built upon the case method. The Department of Social Relations has under consideration studies related to higher education but not specifically to the problems of administration.

INDIANA UNIVERSITY. Prof. Edward E. Edwards in the School of Business there has been studying ways of improving faculty productivity and the mechanics of our present system which affect the efficiency of faculty instruction and student learning.

MICHIGAN STATE UNIVERSITY, BUREAU OF EDUCATIONAL RESEARCH. W. B. Brookover of this bureau is chairman of the Committee on the Sociology of Education of the American Sociological Society.

UNIVERSITY OF CHICAGO. The Midwest Administration Center organization is now in the seventh year of publishing the *Administrator's Notebook* which includes accounts of a number of relevant studies, although they generally focus upon public school administration. Its program has emphasized administrative theory, as referred to in this report.

PENNSYLVANIA STATE UNIVERSITY. A very informative President's Seminar was sponsored by this university for its own staff on the subject of role and responsibilities of departmental chairmen. Held in April of 1959, the seminar brought together deans and academic department heads.

PRINCETON UNIVERSITY, THE STUDY OF THE COLLEGE AND UNIVERSITY PRESIDENCY. This study, under the direction of Harold W. Dodds, is referred to above.

SOCIAL SCIENCE RESEARCH COUNCIL. This organization with headquarters in New York City has considered the subject of social science research and higher education. A memorandum on this matter has elaborated on the problems of research and contributions possible from the social sciences.

SOUTHERN REGIONAL EDUCATION BOARD. At present this organization has two kinds of relevant activities underway: (1) a survey of the administration of organized research in universities in the South, and (2) a study of institutional research activities and of ways this activity can be more widely used as a basis for decision making.

STANFORD UNIVERSITY. Ralph W. Tyler, director of the Center for Advanced Study in the Behavioral Sciences, has been concerned with the application of the behavioral sciences to the problems of academic administration. Among other activities, he has produced an unpublished paper on the problems of appraisal in colleges and universities. Prof. W. H. Cowley has been developing for more than a decade a comprehensive analysis of higher education. Administrative process and structure form only one part of his unpublished work, *Appraisal of American Higher Education: 1956*. Professor Cowley has completed five of eight parts of this manuscript which examines the total operation of colleges and universities within the context of their historical background and contemporary culture. He has under his direction a doctoral program for students majoring in higher education and planning careers in administration.

UNIVERSITY OF CALIFORNIA. The Center for Study of Higher Education has underway a 5-year study of selected colleges, their character, and their impact on students. The ramifications of the work of its staff has pertinence primarily at this time to an understanding of what this report has designated as the institutional setting.

UNIVERSITY OF PITTSBURGH. The staff of the Administrative Science Center has begun study based upon the social sciences to develop insights of a general nature valuable to specific administrative situations encountered in various fields, including that of education. Two illustrative studies, now underway, are concerned with the adaptation of a school system to a new superintendent and with an analysis of how a number of business executives perceive themselves and their tasks.

UNIVERSITY OF TEXAS. Among other activities, Reece McGee is studying the working conditions of junior faculty members at two large State universities. His papers include one which considers the "process and organization of administration."

WASHINGTON UNIVERSITY. Alvin W. Gouldner, chairman of the Department of Sociology, has been studying the problem of social roles of participants in organizations and how these affect organizational behavior. This is reported in two articles in the *Administrative Science Quarterly* of December 1957 and March 1958.

WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION. This organization has taken the initiative to report various studies made by institutions within their geographical area. Their findings are published in *Institutional Research in the West*, 1959.

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Study Abroad

by
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*Clearinghouse of Studies
on Higher Education*

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FOREWORD

STUDY ABROAD is coming to be regarded as a legitimate and valuable aspect of higher education, not merely for the few who can afford it but for the many who can profit by exposure to the cultures of other nations. Indeed, among the objectives of higher education in a world made small by economic interrelationships and modern methods of communication and transportation, furthering the understanding of intercultural relationships vies with the development of scientific talent in importance. The rapid growth of programs of group study abroad in recent years attests to the significance which the colleges and universities, and the society they serve, attach to their responsibility for helping prepare their students to assume effective roles in world affairs.

This report is the sixth in the series *New Dimensions in Higher Education* published by the Office of Education. It summarizes the general status of programs of group study abroad as of the academic year 1959-60 and discusses objectives and problems of accreditation and evaluation of such programs. Individual study abroad is not included.

The institution with an established program of group study abroad will find in this report information useful in evaluating its own program in light of what can be learned about both similar and quite different programs of other institutions. The institution interested in assessing plans for establishing a new program of its own or in cooperation with other institutions will find this report a quick summary of what has been, and is being, done in programs of study abroad. Specific references are intended to illustrate rather than evaluate the practices described.

Dr. Abrams is well qualified to prepare this report. He served in Germany in 1953 as specialist on youth activities under the State Department exchange program; in 1956, 1957, 1958, and 1960, he was educational director of shipboard orientation programs of the Council on Student Travel; in the spring of 1958, he directed the orientation program for guides preparing to serve at the U.S. pavilion at the Brussels Fair. He has also directed international student seminars of the American Friends Service Committee, both in Europe and in the United States. Dr. Abrams helped to organize the program of

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Antioch Education Abroad, serving as consultant in Europe in 1956-57, and is now in charge of the orientation program for Antioch students who go overseas. His general knowledge of the development and status of programs of group study abroad have contributed substantially to the usefulness of the material presented here.

It is believed that this report will prove especially helpful to those institutions contemplating the expansion of their programs or the establishment of new programs of group study abroad, a dimension of higher education designed to help meet the challenge of preparing today's students to live in tomorrow's world.

Editorial assistance in the preparation of the manuscript was provided by Lanora G. Lewis of the Office of Education staff.

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STUDY ABROAD

I. Development and Objectives

COLLEGE EDUCATORS are agreed that they owe it to their students to prepare them to assume an effective role in world affairs. Some even feel that this has become a "central and primary mission."¹ Such a thesis does not draw complete assent, but all educators will acknowledge that a better job of international education for the undergraduate is imperative, that, as John W. Gardner of the Carnegie Corporation has declared, "All students should have *some* exposure to world affairs."²

The traditional way to do this is by refashioning the curriculum, making it more international and less parochial, and such efforts are well under way.³ A more radical approach is to start with the proposition that the best way to expose a student to world affairs is to transport him bodily to another culture. Dean Harlan Cleveland of the Maxwell School at Syracuse University has repeatedly urged the exposure of "every college student . . . to the fullest possible immersion in a foreign culture, language and all, . . . as a necessary modern supplement to American 'general education.'"⁴ Similarly Samuel Gould, Chancellor of the University of California at Santa Barbara, has insisted that such an experience should become "a normal part of a college education; not merely for the few who can afford it, but for the great many and within the normal college fee structure."⁵

In the light of recent developments in the foreign study field, such statements do not seem so daring. Before the Second World War, study abroad for American students was indeed for the few. It was

¹ "Minutes of the Annual Meeting of the American Council on Education, Oct. 8, 1959," in *Educational Record*, XLI (January 1960), pp. 101-102.

² Carnegie Corporation of New York, *Annual Report for 1959*, p. 13.

³ *Ibid.*, pp. 32-33; Richard N. Swift, *World Affairs and the College Curriculum*, Washington, American Council on Education, 1959.

⁴ Harlan Cleveland, "The Real International World and the Academic Lag," in *New Viewpoints in the Social Sciences*, 28th Yearbook, Washington, National Council for the Social Studies, 1958, p. 187. Cf. also Harlan Cleveland, Gerard J. Mangone, and John C. Adams, *The Overseas Americans, Agenda for Action*, New York, McGraw-Hill, 1960.

⁵ Samuel Gould, "Education for a Global View," in *Knowledge Is Not Enough*, Yellow Springs, Ohio, Antioch Press, 1959, pp. 177-178.

mainly for graduate students, in fact, and only a small number of undergraduates participated in the Junior Year Abroad programs of the University of Delaware, Smith College, and Rosary College or ventured abroad on their own. In the entire period from 1919 to 1955, the Institute of International Education has been able to find records of less than 2,000 undergraduates,⁶ whereas during the single academic year 1956-57 more than 1,000 were studying abroad. The Institute's figures for this year tell the story of what has been a remarkable development. In 1957 some 365 institutions reported programs or policies which enabled their undergraduates to study abroad. Twenty-five of them were actually conducting programs during the academic year or planning to establish such programs. Many more were carrying on study programs during the summer, so that the total of students earning academic credit abroad was estimated as at least 2,530.⁷ While this was less than one-fifth of all American students abroad in 1957, a majority of the students involved in programs carried on by American institutions overseas were undergraduates.⁸

These statistics led the Institute of International Education to observe in 1958 that "a substantial number of colleges apparently now regard foreign study as a legitimate and valuable aspect of undergraduate studies."⁹ Further expansion since then is convincing evidence that the educational possibilities of foreign study have found wide recognition. Yet the development has been almost too rapid. There has been some cooperation among institutions but little coordination in establishing and administering programs and maintaining standards, and there is no clear agreement on some of the important educational issues involved. Initiatives for programs have come from a wide variety of prime movers—individual professors, students, academic departments, college presidents, and, one suspects, from public relations offices. Program objectives have rarely been

⁶ Kenneth Holland, "Statistics and Comments on Exchange With the United States," in *International Social Science Bulletin*, VIII (1956), pp. 628-631. The early records are quite incomplete, reflecting the little attention paid to undergraduate study abroad at that time. It was not until 1954-55, in fact, that the Institute made its first census of Americans studying abroad.

⁷ Institute of International Education, *Foreign Study for U.S. Undergraduates*, New York, Aug. 1958, pp. 6-7, 26-31 (hereafter cited as *IIE Report*). Cleveland, Mangone, and Adams surveyed the field in 1958 and estimate that the figure in 1960 is now about 3,500 students, with 2,000 of them enrolled for credit courses abroad during the summer. Cf. Cleveland, Mangone, and Adams, *op. cit.*, p. 206.

⁸ Institute of Research on Overseas Programs, *The International Programs of American Universities*, East Lansing, Michigan State University, Oct. 1958, p. 40. This comprehensive inventory of the overseas activities of American universities represents the first publication of the Institute under the direction of Professor Edward W. Weidner. It is cited hereafter as *Weidner Report*.

⁹ *IIE Report*, p. 22.

defined precisely, and even more rarely have outcomes been carefully evaluated or the foreign experience creatively integrated within the campus educational framework. The administrators have proceeded largely on the faith that foreign study is a good thing. There has been an air of excitement in national meetings on educational travel, a sense that something valuable and dynamic is going on, but those concerned are not sure exactly what it is, how it is to be measured and recorded, how it can best be exploited, or, for that matter, in view of the pell-mell development of programs, whether it might actually be doing some damage, not only to our own educational standards, but to our relationships with foreign peoples.

It was such considerations as these that led to the calling of a conference that met in January 1960, at Mount Holyoke "to provide long-needed guidance in an increasingly chaotic field." The invitation declared ominously, "We run a serious risk that, through ignorance, misdirection, and sheer rapidity of growth, American education overseas may suffer serious harm in the very near future." For some years the only meetings called expressly to consider educational travel had been the enthusiastic and stimulating but rather unwieldy annual conferences convoked by the Council on Student Travel, an organization which was formed originally in 1947 to deal with transportation problems for agencies with European summer projects for students, but which has recently drawn into its membership an increasing number of colleges with newly developing study programs abroad.¹⁰

Meanwhile, colleges with long-established programs had met together in the Council on the Junior Year Abroad of the Institute of International Education. These were joined by the Association of American Colleges and the Experiment in International Living in inviting to Mount Holyoke some of the most experienced leaders in the field of international education representing both old and new programs, and asking them to turn their minds to the problems of improving overseas study programs. The report of the proceedings reflects the concern which prompted the calling of the conference. Despite the many problems and perplexities which engaged their time, the conferees did not neglect the original purposes of the conference. They insisted that programs be well conceived and carefully conducted and that administrators begin to coordinate their efforts, and they made specific recommendations to that end. They wanted public attention given to the whole question and approved the con-

¹⁰ John E. Bowman, "The History of the Council on Student Travel—A Historical Memorandum," mimeo, New York: Council on Student Travel, 1959.

vening of a national conference on foreign study to meet in Chicago in October 1960.¹¹

The basic prerequisite of a good program, as the Mount Holyoke report emphasizes, is a carefully set forth list of objectives. It will not do to assume that, since travel is broadening, any educational enterprise that takes place in foreign parts is bound to be of more value to the student than what he would be doing at home. In the debate which Bishop Hurd imagined between Lord Shaftesbury and John Locke on the uses of foreign travel in education, Lord Shaftesbury, who spoke for the affirmative, is remembered more often than his opponent. Locke's dissenting opinion on foreign travel is worth citing: "I see but little good in proportion to time taken up that can be drawn from it, under any management." And as for the way it was managed in his day, he was represented as seeing "nothing but mischief springing from it."¹²

It is hardly surprising to find statements of purpose of existing programs something less than precise. They are generally written up in the promotional prose of the college catalogue, and they reflect the conviction that certain happy educational outcomes will ensue, rather than any intention to evaluate the results. The stated objectives can be grouped under three general headings:

1. *The intellectual and professional development of the student in his specialized field of study.*—It was to acquire specific knowledge that the earliest wandering scholars left their own countries. This has been the chief purpose of graduate study abroad, and it was the objective of the first Junior Year programs, which offered language and literature majors the opportunity to study their specialties *in situ*. Other fields of concentration have been added since, and students preparing for such careers as teaching and foreign service are encouraged to study abroad in pursuit of vocational objectives.

2. *The general education of the student.*—This refers to the kind of motives which led young Englishmen to take the Grand Tour in the 17th and 18th centuries so that they could become broadly cultured and prepared to give their society intelligent leadership. Today we may be more interested in turning out responsible citizens than cultivated gentlemen, but the general education values claimed for foreign study are not so very different. They include both the academic and the broadly educational, the development of the student's mind, his personality, and his spirit. Foreign study proposes to increase

¹¹ "Academic Programs Abroad: An Exploration of Their Assets and Liabilities." Report of the Conference held at Mount Holyoke College, South Hadley, Mass., Jan. 14-16, 1960.

¹² Richard Hurd: "On the Uses of Foreign Travel Considered as a Part of an English Gentleman's Education," in *Moral and Political Dialogues* (3 vols. 3d ed., London, 1765). Dialogues vii and viii. III, pp. 1-188.

the student's knowledge of international affairs and his appreciation of his cultural heritage, to give him perspective upon his own society and a new understanding of human society. He is to be led to examine his values, to test them against those of another culture, and to emerge less provincial and more free from prejudice. If study abroad involves the learning of a second language, new doors of cultural appreciation will be open to him, while the need to use the strange tongue in unfamiliar situations will be a constant challenge to resourceful thinking. Even without this special demand, the confrontation of a foreign environment is enough in itself to call for qualities of self-reliance and maturity.

3. *The furthering of international understanding.*—This is a purpose for study abroad which has become prominent only in the 20th century. It is a constantly recurring phrase in statements of purpose for foreign study, but rarely is it carefully defined. It can mean an increase in the student's understanding of international relations or even the cultivation in the student of the value of worldmindedness, of a disposition in favor of world peace. As such it belongs to the second objective above. Or it can mean the improvement of relations between peoples as a consequence of increased contact between them, assuming that familiarity breeds good will, or at least that the knowledge gained is a necessary, even if not a sufficient, condition of friendliness. In this sense international understanding is a goal of the institution rather than of the individual student, and it may represent a national objective as well. President Eisenhower presumably had this latter meaning in mind when he called for a "massive" interchange on the plateau of youth to accompany peacemaking at the summit.¹²

II. Program Patterns

These objectives of study abroad have been sought through a great variety of programs with different combinations of the elements of study, travel, family living, and even work experience, with varying periods of time, with diverse relationships to educational institutions and personnel of the host country, and for students of various educational levels and qualifications. Rather than survey them all, this

¹² Speech at the University of Delhi, December 11, 1959, cited in *IN News Bulletin*, XXXV (Jan. 1960), No. 5, pp. 2-3. On the objectives of educational travel in historical perspective, see the essay by Guy S. Metraux, *Echange Persons, the Evolution of Cross-Cultural Education*, pamphlet 9, New York, Social Science Research Council, 1952; also, his "Introduction: An Historical Approach," pp. 577-84 of *International Social Science Bulletin*, VIII, No. 4 (1956), the entire issue of which is devoted to "Cross-Cultural Education and Educational Travel." Also see the study of American Fulbright students in France by John T. and Jeanne E. Gullahorn, "American Objectives in Study Abroad," in *Journal of Higher Education*, XXIX (Oct. 1958), pp. 369-74.

report attempts merely to suggest the variety of programs and to indicate the trend of recent developments.¹⁴ There are four patterns of group study abroad: (1) the organized year abroad; (2) the academic term abroad; (3) the summer session; and (4) the study tour.¹⁵

The Junior Year Abroad represents the oldest and best established type of program for group study abroad. It was first developed by the University of Delaware, which established a program in France in 1923, primarily designed for language majors. Since 1945, the idea has been imitated and modified by many institutions, so that today more than 20 are conducting such programs, a good number of them open to undergraduates from other colleges. Language and literature studies still predominate, but a wide variety of other courses may be pursued.

Geographically the programs have tended to congregate in the large cultural centers of Europe. Paris has been especially favored, but Madrid and Florence are also popular. A new departure has been the establishment of Junior Year programs in Latin America: New York University at the University of Bahia in Brazil; Fordham at the Catholic University of Santiago in Chile; Indiana University at the University of San Marcos, Peru; and the University of Kansas at the University of Costa Rica. This development has had the active support of the State Department.

The Junior Year was devised to bridge the great gulf between the American college and the Continental university. The American undergraduate is accustomed to a society where his alma mater not only endeavors to elevate his mind but lodges him, feeds him, advises

¹⁴ The first statistical and descriptive report was the *IIE Report*, cited above. Programs on the continent of Europe have been described and evaluated by Professors John A. Garaty and Walter Adams in their provocative study, *From Main Street to the Left Bank, Students and Scholars Abroad*, East Lansing, Mich., Michigan State University Press, 1959. This was the second product of the Institute of Research on Overseas Programs. Professor Weidner devotes a chapter to study programs abroad in his forthcoming volume in this Institute's series of publications. A short essay on the Junior Year program, with special reference to Sweet Briar, is Francis M. Rogers' *American Juniors on the Left Bank*, Sweet Briar, Va., Sweet Briar College, 1958. Two volumes in the American Council on Education's Studies in Universities and World Affairs give some attention to study programs abroad: Howard E. Wilson, *American College Life as Education in World Outlook*, Washington, 1956, ch. 5; and Richard N. Swift, *World Affairs and the College Curriculum*, Washington, 1959, ch. 8. See also the very useful pamphlet published by the IIE's Committee on Educational Interchange Policy, *College and University Programs of Academic Exchange*, New York, March 1960, pp. 14-17, and selected bibliography. The most recent discussion is Cleveland, Mangone, and Adams, *op. cit.*, pp. 206-218.

In September 1960, the IIE will publish the results of their most recent survey: *Programs for U.S. Undergraduates in Other Countries, A Survey of Present and Proposed Programs*.

¹⁵ An alternate typology suggested by Professor Weidner at the Mt. Holyoke conference classifies the programs according to the degree of responsibility taken by the American institution and the host institution abroad. At one pole is the self-contained branch of the American university overseas, at the other the arrangement whereby the American student is completely integrated within the foreign educational structure.

him at every turn, registers his progress toward the sheepskin by a meticulous system of academic bookkeeping, and stands to him *in loco parentis*. In contrast, the Continental university represents a system of rugged individualism, where the American student would have to pursue his studies not only in a foreign tongue but in the absence of such aids as reading assignments and periodic examinations and alongside the products of educational systems which permit only the elite to reach the university. How could the American undergradua. immerse himself in such an environment without drowning?

The Junior Year attempts to solve this problem by sending students in a group to a university town where they are carefully supervised by a resident director and his assistants who perform some of the same functions which the university has handled at home. The director sees to the lodging of his charges, often in private families, serves as dean of students, and arranges for them to follow a combination of courses. He evaluates their performance in the kind of academic currency which can be deposited to their credit in their account with the registrar at home.

The courses are of various kinds. First, there are those organized by the director, who engages local teachers for the purpose. These may have to do with cultural aspects of the host country, but most frequently they are language courses, since most American students find that, no matter how much foreign language they have studied at home, it is still not enough to enable them to follow with understanding the regular courses in the university. A number of Junior Year programs begin with a period of intensive language work, either at a regular summer school or in a special course organized for the purpose. The regular courses at the university may be taken by the Americans, who in some programs are provided with specially hired tutors to assist them. Another type of course is most frequently to be found in France, where the university itself arranges special courses in French civilization for foreigners.

This basic design has many variations. While the usual program of this sort is organized for a group, there are several highly individualized programs (not including those of individuals who study abroad independently and settle academic accounts with their colleges on their return). Fordham sends top honors students to Paris and Louvain, where they are assisted by Catholic groups but pursue their university studies primarily on their own. Elmira College has students at seven universities in six different countries, where they are regularly visited by a roving director who helps them with study, living, and travel arrangements. Antioch College has developed a similar pattern in extending its work-study plan across the Atlantic. The overseas director not only helps the students with study and living

arrangements but must also arrange their job placement in the different countries. At present, more than 70 students are studying and working in 9 European countries, paying no more than the regular Antioch tuition. The individualized nature of the plan enables an occasional specially qualified student to work or study in the Middle East or the Far East. Most of those studying in France and Germany are directed to the universities of Besançon and Tübingen, where their only group activity is a periodic seminar meeting to explore aspects of the local culture.

There are other differences in these Junior Year programs. While most of them admit only juniors, Hollins College has found it satisfactory to send students to France in the middle of their sophomore year, some without preparation in French. The students devote the first semester to an intensive course in that language and then spend the summer in an organized group tour before taking up the more serious academic work of the second semester. They return to campus with three semesters left to readjust and to assimilate the foreign experience.

A more radical innovation is the Saizburg year of the Oberlin Music Conservatory. In 1958 the whole junior class went to study at the Mozarteum in what was the first required Junior Year Abroad program to be established. Its purpose is twofold: to "provide Oberlin students with a first-hand insight into musical traditions and concepts on the scene and in the atmosphere where the traditions and concepts developed;" and to increase the Oberlin enrollment by 100 students without increasing campus facilities. The cost is held down to a year's cost on campus, and a liberal scholarship policy insures that all the juniors will be able to take part. The first year's results are now being evaluated.¹⁸

The term abroad during the academic year, the second category of program, has most frequently been established for purposes of general education. The pioneer was Lake Erie College, the first institution to require foreign study as a regular part of its educational program. Since 1952 Lake Erie has sent its juniors abroad for the winter quarter. The girls go to one of a number of study centers set up near universities and other institutions abroad. They have some formal academic work under the direction of committees of Europeans in each center, and each student does a study project on some prescribed topic which can be explored locally. This ambitious venture has highlighted some of the difficulties involved in requiring foreign experience of *every* student. For one thing, costs must be held down so that the

¹⁸ Paul and Barbara Steg, "The Oberlin Students at the Mozarteum. A Report for 1958-59," Oberlin College, Oberlin, Ohio, June 1, 1959.

whole experience costs the Lake Erie student no more than the winter quarter on campus. This limits the activities that can be organized for the students overseas. Moreover, when the experience is expected of all students, foreign language competence cannot be required, nor can the standards of academic work abroad be maintained at as high a level as in more exclusive programs. There have been critics of Lake Erie's program who have not taken these factors into account.¹⁷

There are other problems involved in planning foreign study for the many. The plan which Stanford inaugurated in 1958 at Beutelsbach near Stuttgart illustrates some of them. In order to make the program available to students, some with little language competency, as early as the sophomore year, Stanford established a branch campus there, providing its own dormitory and instructional facilities and staffing the enterprise, except for language instructors, with faculty from its home campus. About 60 students fly over the Pole to Beutelsbach each June, where they take courses in German and general studies which should profit from the European setting. At the end of 6 months, they are replaced by another group. The fees paid by the students are the same as would have been paid for two quarters on campus and cover all expenses abroad except those of the return journey.

There are those who maintain that the "expatriate campus" does little more than transport the American faculty, students, and educational process to foreign soil. On the other hand, there are certain advantages. The plan makes the foreign experience available to students who are still at the academic level when they are completing their general education requirements and who are not forced to interrupt their normal college course. It is clear that the younger the student, the more his home institution may need to do for him and the less contact he may be prepared to have with the foreign educational system.

The Stanford authorities maintain that the students are not isolated. They have field trips, pleasant associations with the Beutelsbachers, and 3-day weekends when they explore much of Europe. Moreover, the Stanford plan does not put a strain on already overcrowded educational facilities overseas, and it frees space on the Stanford campus for at least 60 transfer students each year. Whatever the critics may say, the Stanford students are enthusiastic, the administration is pleased, and new branches in Florence and Tours are scheduled to open in 1960.¹⁸

¹⁷ Garraty and Adams, op. cit., p. 211.

¹⁸ Robert A. Walker, "Stanford: Overseas Campuses," in *THE News Bulletin*, XXXV (March 1960), pp. 26-29; also Frank J. Taylor, "We Come as Learners," in *Readers Digest* (July 1959), pp. 182-186, condensed from *Stuttgarter Zeitung* (May 26, 1959).

Variations of this type of semester abroad are being tried elsewhere. In 1958 Antioch College established a small branch at Guanajuato in Mexico, and in 1959 Syracuse did the same in Florence, both in the field of general education, while Colgate has experimented with a branch for its honor students at Mendoza, Argentina. Syracuse accepts sophomores as well as juniors from all colleges, requires no Italian and provides instruction in English. In contrast to the Stanford plan, the students are lodged with families with the assistance of the Experiment in International Living. In 1961 Syracuse will offer a semester program at the University of San Carlos de Guatemala in Guatemala City. Antioch accepts only its own students and arranges the 12-week quarter in Mexico within the regular college fee. Students must know Spanish, in which language the instruction is given by members of the faculty of the University of Guanajuato, and it has been found possible to accept qualified freshmen who have studied Spanish in secondary school. Credit earned may be applied to general education requirements. Antioch also houses the students in private homes.

Two other semester programs may be cited as illustrative. Adelphi College has built a foreign experience into its undergraduate program in teacher training. Each June following the junior year, Adelphi pre-seniors travel to Europe with a program director to study at a foreign university during the fall, returning to campus in January to complete their senior year. There is careful preparation for the foreign study through field experiences in the preceding summers and through campus planning, and a high level of integration with the total educational program is reported.

Finally, Goddard College in Vermont has imaginatively demonstrated how to exploit resources nearer home. In 1957-58 Goddard inaugurated its Program in Comparative Cultures. During the fall semester, students electing the course in their freshman or sophomore year study French language and social science techniques, with special reference to the French-Canadian culture. They try out these techniques and concepts on field trips to nearby Quebec. Then during the winter term, when other Goddard students are also off campus on their jobs, the Comparative Culture group settles in a French-speaking community in Quebec, where for 2 months each student lives with a family and works in an office or factory. The course instructors also go to Quebec and are available for group seminars and to consult with students on individual projects of exploring the culture. In the spring semester back on campus, the language and social science studies are continued, with a systematic effort to place more and more responsibility upon the student himself. While Goddard is favored by its geographical position and its already existing field program, the de-

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sign of the Goddard plan, which coordinates a residential foreign experience within a campus seminar, may hold possibilities for other colleges as well.¹⁹

The summer program, the third general type, has usually represented an addition to the curriculum, rather than an integral part of the educational program. Here as well there are some significant developments, and current proposals for more effective utilization of the summer period will do well to take them into account.

Most of the summer programs organized by colleges have been established for the study of language and literature. For example, Temple University, the University of Mississippi, and Syracuse University have French programs at Paris, Aubigny, and Caen, respectively; Sarah Lawrence College conducts an Italian program in Florence; Oberlin has programs in Vienna, France, and Mexico; and the San Francisco College for Women has Spanish programs both at Valencia in Spain and Guadalajara in Mexico. A number of institutions, especially southern schools, take advantage of the proximity of Mexico for summer language programs, although the academic quality of these language programs is reported to be very uneven.

There are two new programs in Mexico which go beyond language study in their objectives and which explicitly aim at promoting mutual understanding between Mexico and the United States. One is the International Summer School established at the Instituto Tecnológico y de Estudios Superiores of Monterrey by the University of Kentucky in cooperation with nine other institutions of the Southern Association of Colleges. This development was a direct consequence of President Eisenhower's speech at Baylor University on May 25, 1956, urging universities to take a leading role in promoting international understanding. The plan is for each of the United States universities to send one professor and 10 students to a 6-week summer session, at which courses are offered not only in Hispanic language and civilization but also in social studies and even in English composition. Instruction is in Spanish and in English, and the membership of the Instituto in the Southern Association of Colleges simplifies crediting problems.²⁰

The second program is the summer school established at Guadalajara by the University of Arizona as an experimental honors program for superior students. Along with courses in Spanish language and literature, there is a seminar on Mexican affairs. Students must pledge themselves to speak only Spanish both inside and outside of

¹⁹ *Comparative Cultures*, The Goddard Bulletin, Plainfield, Vermont, October 1959.

²⁰ This program is analyzed in Richard N. Adams and Charles C. Cumberland, *United States University Cooperation in Latin America*, East Lansing, Mich., Institute of Research on Overseas Programs, Michigan State University, 1960, pp. 250-256.

class. Both of these programs are being launched with the support of the Carnegie Foundation, which with its special concern in this field has also assisted in the development of French summer schools at McGill and Laval Universities in Canada.

It was the Carnegie Foundation also which made possible an experimental Russian language program in which the Soviet Union is used as the language laboratory and in which the costs of transportation are covered by the Foundation. The purpose of the experiment, which began in the summer of 1959, is to discover the minimum time in which American undergraduates can master the Russian language under optimum conditions. In the first summer 20 students of Russian, selected from five institutions, participated in intensive language workshops at Middlebury College and Indiana University and then flew to England to sail for Leningrad. From that moment until the end of their 30 days of tourism in the Soviet Union, they were pledged to speak only Russian. The results of the systematic testing to which they were submitted along the way have not been published, but the students themselves have expressed lively satisfaction with the experience, despite the acknowledged emotional burden of the pledge. A significant byproduct has been that the intensive foreign exposure has seemed to confirm their previous career choices.²¹ As the experiment progresses, it will be interesting to see how systematic ways of making use of the Soviet environment are developed. Since there is evidence that the success of language study programs abroad is due more to the natural incentives and opportunities provided the student in the course of his daily life than to any imaginative new methods of language teaching, it would be an advantage to know more about how to plan effectively for the exploitation of extracurricular experiences and to relate them to classroom learning.

The summer period is also being used for other kinds of specialized study. Cooperative programs in both international relations and anthropology are beginning in 1960 with Carnegie support. The program in international relations will take about 15 juniors from Princeton, Colgate, Columbia, Rutgers, and Swarthmore to Europe for 8 months. On arrival they will study as a group for 2 weeks. Then each will pursue an individual research project, the results of which will be shared with the group in a final 2 weeks at the study center. The completed thesis will be submitted to the student's own institution on return. The summer study program in anthropology will send students from Columbia, Cornell, and Harvard to join research teams

²¹ "Americans Learn Russian in the Soviet Union," in *Carnegie Corporation of New York Quarterly*, VII (October 1959), No. 4, pp. 5-6. In 1960 Indiana and Michigan are the universities involved.

of anthropologists working in field stations in Mexico, Ecuador, and Peru. The program is not primarily designed for majors in anthropology. The broad purpose is "to expose college students to the realities of cultural contrasts and to encourage among them a deeper appreciation of the goals and research procedures of the behavioral sciences." The field work is planned "to yield a type of cross-cultural understanding that cannot be obtained by the casual tourist, and that is not available in the students' usual academic program."²²

Still a different type of summer plan is the expansion of the field work program at Keuka College to include summer jobs abroad. In 1959, 22 Keuka girls worked in six different countries in Europe, and the hope is that most of the Keuka students will be able to share this experience. This development has been part of a new international relations program at Keuka, which also draws Carnegie support.

The summer period has also been used for programs of general education. In 1957, Hope College established its Vienna Summer School, which in 1959 attracted students from 19 different institutions. After a short tour of Western Europe, the students settle down in Vienna to study courses chosen from among offerings of German, art, history, literature, and music. These are given in English by European faculty, with Hope professors serving as "associate instructors."²³

Indiana University has worked out an interesting pattern of inter-collegiate cooperation in conducting summer sessions in England and Mexico in association with a number of Indiana colleges. In each program the student selects a study project, preferably in his major field, which can be pursued through reading, interviews, and participation in community life abroad. Another program of this type is the summer study established in 1958 at Kalamazoo College, which takes students to university centers in Europe and Latin America. Finally, New York University is inaugurating a summer program at the University of Leiden in the Netherlands, which provides a wide range of courses in humanities, education, and political economy.

The study tour, the fourth general type of program, at its best can represent a creative variation of the traditional field trip and at its worst might do some mischief. In 1954, 137 institutions reported that they were granting credit for travel tours, most of them on the basis of one credit per week.²⁴ Educators in the field of foreign study take

²² "European Study Program in International Affairs," in *IIE News Bulletin*, XXXV (January 1960), No. 5, pp. 44-45.

²³ Paul G. Fried, "Hope College Summer School in Vienna," in *Association of American Colleges Bulletin*, XLIV (May 1958), pp. 339-346; Fried, "Hope Promotes World Understanding," in *Hope College Alumni Magazine* (January 1960), pp. 1-4.

²⁴ Herrick B. Young, "No Academic Credit for Travel Abroad," in *School and Society*, LXXXI (May 28, 1955), pp. 168-169; Nancy Jean Wilcox, "A Survey of Educational Travel Courses Offered from 1946 through 1951," unpublished doctoral dissertation, Cornell University, February 1953.

a dim view of the academic quality of many of these tours. Some of them are conceived in the first instance by commercial agencies, which engage professors with wanderlust to gather student customers and then persuade institutions to grant the credit which justifies the academic designation. There is little question about the right of travel agencies to operate such tours; but the granting of academic credit for sightseeing can endanger the whole development of educational travel by throwing academic standards into question. The Mount Holyoke conference recommendations were adamant in stating that no academic credit should be granted unless the program is officially sponsored by the institution, not merely by a professor, and unless there is a bona fide program of serious study with final examinations comparable to that on the home campus. It is assumed that these criteria would allow for flexible programs which could take full advantage of the unique opportunities in the field. The basic principle is that the educational goals must be served by the travel plan; they must not be used to justify it.

There are, of course, a number of institutions which have conducted travel tours with good academic standards. Western Michigan, for example, insists upon approval by the curriculum committee of the university for all prospective study-tours, and this is granted only upon submission of a detailed set of plans which must conform to rigorous standards. A minimum of 14 clock hours of organized instruction periods must be provided for each semester hour of credit to be granted, and the total may not exceed one semester hour for each week of the tour.

The State University of New York, whose courses are primarily for graduate credit although advanced undergraduates may enroll, prescribes 15 clock hours for each semester hour of credit and weighs these according to a special formula: 1 hour of conventional lecture or discussion is counted at par; 2 hours of "laboratory-type instruction" such as attendance at performances or museum visits, preceded by specific preparation, are counted as 1 hour; whereas it takes 3 hours of what is called "studio-type instruction" to equal 1 hour. These last include attendance at performances and visits to museums and historical sites without specific preparation, but upon the instructor's approval, to advance individual interests.

Another approach is that of Western College for Women, where a summer flying seminar forms part of a general education emphasis upon international relations. Each year's area study features a different part of the world: Asia, Africa, the Middle East, or Latin America. A visiting professor from the area and foreign students on campus

help with the study. Then in the summer a Western College faculty member directs a tour of the area. No credit is granted, but the returned students are expected to draw upon their summer experiences for their senior independent study project. This plan with its accompanying features of bringing foreign scholars and students to the college has given the Western campus a distinctive international atmosphere.

The diversity of programs reflects a wide difference of opinion as to the proper objectives of foreign study. At one end of the spectrum are the conservatives who would reserve it exclusively for graduates, at the other end the radicals who cherish a foreign experience for every college student. Close to the former are those who would accept undergraduates, but chiefly to pursue studies in specialized fields, such as language and literature and area study. Close to the latter are those who are designing general education programs which can be taken as early as the sophomore year.

III. The Test of Quality

Few institutions have undertaken any kind of systematic evaluations in order to discover the extent to which their objectives are actually being attained. One notable exception is the extensive study made by C. Robert Pace of the Junior Year program in France which was established by Delaware and is being carried on by Sweet Briar. Pace's findings suggest that, paradoxically, the student who follows the narrower academic course may receive the broadest values. This is true, at least, when he has the linguistic equipment and the occasion to immerse himself deeply in the environment both inside and outside the university.

The Pace study revealed that the Junior Year had some influence upon career objectives of its alumni, but the most significant impact of the experience was upon general cultural values and political-international attitudes. When compared with a control group made up of their contemporaries from the same colleges, the alumni turned out to be "more tolerant in their acceptance of people who differed from themselves . . . more fully aware of significant intercultural contributions to the life of the 20th century," more involved in internationally-oriented activities, and more disposed to support internationalist policies. Pace concluded that the experience had had a "strong and pervasive" influence upon the lives of participants. Significantly, such values were not found in members of the control group

who had traveled abroad but had not participated in the program.²⁶ This would tend to confirm the principle that travel cannot be expected to yield educational values if it is not part of an educational program.

That general education values may be produced by a less intensive foreign experience than the Junior Year has been indicated by the careful study that Dr. Elizabeth Leonard has made of the Adelphi program which she directs. Although the sample of students was small, Dr. Leonard did find significant gains both in cultural values and in personal maturity.²⁷

We can hope that these two studies may represent the beginning of a little more self-examination in this field. It is incumbent upon self-respecting institutions to declare their purposes in terms that will permit evaluation and to develop criteria by which outcomes can be tested. But the imponderables are legion. Investigators have found it difficult to identify the influences which affect the student in the insulation of the home campus. But what if the campus becomes the world? Research in the new field of cross-cultural education has given us some understanding of the complicated set of influences which are at work upon the student abroad. Apparently what he comes home with will depend not so much on what he does abroad as upon such factors as his personality, his role in his own society, and even the kind of audience to which he renders his report. It seems that a knowledge of his previous attitudes may be a better basis for prediction of attitudinal outcomes than knowledge about the foreign experiences itself. His attitudes toward the host country, as indicated by work done with foreign students in the United States, may follow a predictable pattern but is likely to be influenced by such things as the way his fatherland is perceived by the host country and by changes in his own self-esteem.²⁸

Despite the complications involved, it would seem that study programs overseas with their built-in advantages of planned experiences and testing opportunities should prove a fruitful area for cross-cultural

²⁶ C. Robert Pace, *The Junior Year in France*, Syracuse, N.Y., Syracuse University, 1959.

²⁷ Elizabeth Leonard, "Selected General Education Outcomes of a Foreign Travel and Study Program," unpublished doctoral dissertation, Penn State University, June 1959. Also Richard T. Alexander, Jr., "Foreign Study in Teacher Education. An Evaluation Study of the 1953-54 Adelphi College Foreign Study Experience," unpublished doctoral dissertation, University of Tennessee, December 1955.

²⁸ M. Brewster Smith, "Report on the Work of the Committee on Cross-Cultural Education," in *Social Science Research Council Items*, XII (Dec 1958), pp. 40-42; Itzhak de Sola Pool, "What American Travelers Learn," in *Antioch Review*, XVIII (Winter 1959), pp. 431-46; Ruth Churchill, "The Student Abroad," *ibid.*, pp. 447-54. See also F. O. McGuigan, "Further Study of Psychological Changes Related to Intercultural Experiences," in *Psychological Reports*, V (1959), pp. 244-48.

tural research. Carefully designed experiments might well resolve some questions now in dispute among administrators of foreign programs. For example, while there appears to be agreement that, for a student to undertake serious academic work in a foreign tongue, he should stay abroad for a year, there is no consensus as to the minimum period for the achievement of significant general education values. There is some indication that brief study tours may have a very limited effect on attitudes and even that summer experiences involving family living may have little or no lasting influence upon values.²⁸ On the other hand, a 6-month sojourn by a German group in the United States was reported to have some important consequences for the participants because it was long enough to upset some of their predispositions and short enough so that they did not return alienated from their own society.²⁹

If general education outcomes involve intangibles, academic progress abroad in courses can be recorded more readily. Easiest to measure, of course, is advance in a foreign language, although the student's learning here may go beyond reading and writing facility to a solid achievement in thinking and functioning in a foreign language which usually earns him no credits at home. Knowledge of foreign affairs and cultural appreciation can also be tested.³⁰

Crediting procedures vary a great deal. Some institutions give a block of credit for the foreign experience, usually what the student would receive at home in the same period, and often with a grade of "satisfactory." Others allow the student to work out a more flexible program but leave it to him to return with the evidence of what he has done and how well. In still other cases, the responsibility is left to the director overseas to translate the foreign study into American credits and grades.

²⁸ Hilda Taba, *Cultural Attitudes and International Understanding: An Evaluation of an International Study Tour*, IIE Occasional Paper No. 5, 1953; Howard P. Smith, "The Effects of Intercultural Experience—A Follow-Up Investigation," in *Journal of Abnormal and Social Psychology*, LIV (1957), pp. 268-69. That participation in an international work camp abroad may have an important effect on values is indicated in Gordon W. Allport's "An Evaluation of AFSC Volunteer Work Service Camps in Germany," in Appendix A of Henry W. Riecken, *The Volunteer Work Camp: A Psychological Evaluation*, Cambridge, Mass., Addison-Wesley Press, 1952.

²⁹ Jeanne Watson and Ronald Lippitt, *Learning Across Cultures*, Research Center for Group Dynamics, Institute for Social Research, Ann Arbor, University of Michigan, 1955.

³⁰ There are some interesting stirrings among teachers of foreign languages indicating a growing awareness that, in learning a foreign language, the student may be able to gain some special insights into nonliterary aspects of a foreign culture. A report of an interdisciplinary seminar on language and culture contains the very significant comment, "We may eventually be less interested in the student's ability to translate than in his ability to recognize what is not translated or translatable." See "Developing Cultural Understanding Through Foreign Language Study," *PMLA*, LXVII, (1953), pp. 1196-1218, esp. 1211; also Richard N. Swift, *World Affairs and the College Curriculum*, Washington, American Council on Education, 1959, pp. 53-55.

IV. Problems and Potentials

Among the more serious problems is the great variation of scholarly quality from program to program. In their lively survey of programs on the Continent, Professors Garraty and Adams had some harsh criticisms at this point. A course in the *Faculté des Lettres* at the Sorbonne, for example, is something quite different from the *Cours de Civilisation française* so popular with American students, and a program conducted by retired *professeurs* of the *lycée* engaged by an American institution is not necessarily the same thing as a rigorous course conducted by a French university professor.²¹ In the light of such discrepancies, there is a growing feeling that national accrediting or testing agencies may need to be called in, if not to evaluate programs, at least to assist in the development of the criteria by which they may be evaluated. This is only one area where the need for more cooperation and coordination overseas is becoming urgent.

Other problems can be indicated only briefly. Chief among them is the matter of finances. This is not so much a problem of financing the program as it is of financing the student. Most of the foreign programs are run on separate budgets based on participants' fees. Some do a little better than making ends meet, and schools like Stanford, Oberlin, and Antioch have explicitly planned their programs with the intention of enrolling more students without having to expand campus facilities. But how can the foreign experience be made available to greater numbers of students? In private colleges, the tuition is often high enough to cover both the costs abroad and the transportation. But this does not help the student in a State or municipal university. An encouraging sign is that colleges and foundations are beginning to recognize foreign study as part of a student's regular education and to permit scholarships to remain in force while he is abroad. More and more scholarships are available specifically for summer study abroad. But until significant funds can be devoted to this purpose, foreign study will still be for the few.

One problem that is largely being ignored is directly related to the methods of financing the foreign programs themselves. By taking advantage of subsidized facilities overseas, American institutions are able to stay in the black; yet by and large these institutions are not making reciprocal arrangements whereby savings are made available to foreign students studying here. While it may be true that we as a

²¹ Garraty and Adams, *op. cit.*, Ch. XII and *passim*. The greatest source of headaches for stateside registrars and deans is not so much the accreditation of American programs abroad, but rather evaluating credits earned in the growing number of programs established for American undergraduates abroad by foreign nonacademic or quasi-academic organizations whose objectives are often more economic than educational.

Nation import more students than we export, this does not relieve American institutions sending students abroad from meeting their obligations to the foreign institution accepting their students. Moreover, it would not take much imagination to devise coordinated intercultural programs which could have exciting possibilities. By taking advantage of their new contacts abroad and recognizing their financial responsibilities, American institutions, especially liberal arts colleges, could bring a greater number of foreign students to these shores, do a better job of selecting them and orienting them before they come, and make more creative use of their presence on campus in international relations programs involving American students unable to go abroad themselves.

By and large, institutions seem to be doing very little to integrate the foreign experience within the campus educational program. There seems to be more concern about the "readjustment" of the returned students than with methods of furthering the educational process which might have begun abroad. To be sure, it is no mean problem to fit the students back again after they have been abroad; some seem to return only physically. Still, this problem is less likely to be solved by psychological counseling than through providing challenging experiences which will aid the student in rediscovering America, in reconsidering his values after the testing time abroad, and in reflecting upon his experiences. When the returning student is asked what he has to declare, his statement of credits acquired should not be the end of the matter.

Integration with the campus program should begin with a sound orientation program before the student leaves for study abroad, and here also the colleges have much to do. In many colleges orientation is not considered an academic experience at all and is handled as a series of weekly meetings added to a schedule already full to the brim with normal academic requirements and preparations for departure. At most a certain amount of information is purveyed, which ranges all the way from travel tips to introductory remarks about foreign politics and institutions. It is questionable how much effect this has, and one hears frequent complaints from students overseas about the inadequacies of their orientation programs.³²

The ideal orientation would be a course for academic credit. It would seek to draw together the implications of the student's previous general education for his foreign experience, and it would aid him in developing techniques with which to explore the foreign community.

³² Garraty and Adams, *op. cit.*, p. 47. A striking degree of ignorance about European affairs on the part of American students about to disembark in Europe was reported by Professor Mangone of Syracuse, in an account of studies conducted on a shipboard. Cf. "American Students Abroad: Goodwill Ambassadors," Publication No. 6, January 28, 1958, of the Overseas Training Project, The Maxwell School, Syracuse University.

In such a course the cultural anthropologist should have much to offer. While nobody can be entirely prepared in advance for the impact of cultural shock, much can be done ahead of time to increase awareness of cultural differences. Field trips for, or individual projects in, the exploration of an American community could help the student develop the concepts of social analysis which will aid in identifying differences in other cultures overseas. His language study itself might be related to preparation for cultural inquiry. All this would do more than prepare the student to understand the alien community; he would also be better able to interpret American civilization abroad.²²

The success of the orientation program could do much to further the building of creative relationships between the student and the people of the host country, a matter which becomes more and more important as programs proliferate. Ill-prepared students and ill-planned programs of poor quality can lose us friends abroad and do us great damage in the eyes of the foreign educational community. This problem is not helped by the way in which American students and programs are overcrowding university facilities abroad; European institutions in the popular centers are beginning to say that there is no room for more Americans. At this point, it seems clear that foreign study is entering an era in which there will have to be more cooperation and less duplication of programs among the sending institutions. New sites for learning will have to be explored, not only in the provinces on the Continent but also in countries other than Europe. It is a good sign that Junior Year programs in Latin America are under way, and there is talk about possibilities of such programs in Asia and Africa.

Such expansion would bring new problems before those arising from the present programs are solved. Opportunities as well as problems abound. The Carnegie Foundation, which has done much to inspire creative developments, commented in a recent report, "Present pro-

²² For a brief introduction to cultural differences, some colleges use the speech prepared for the Foreign Service Institute of the Department of State by Edward A. Kennard, "Understanding Foreign People," reprinted by the Brethren Service Committee, Elgin, Ill., 1953. See also the report of the Cornell cross-cultural field seminar in Arizona by Robert Bunker and John Adair, *The First Look at Strangers*, Rutgers, 1959. For an account of successful workshop methods used by Dr. Paul Conroy in preparing overseas appointees of the U.S. Information Agency, see his article, "On Giving a Good Account of Ourselves," in *Antioch Review*, XVIII (Winter 1958-59), pp. 411-19. The handiest introduction to life abroad is the booklet prepared for the Foreign Service Institute of the Department of State by Glen H. Fisher: *When Americans Live Abroad*, Department of State Publication 6340, Department and Foreign Service Series 54, Washington, U.S. Government Printing Office, 1956.

visions for travel and study barely scratch the surface of the potentialities."⁴

Any review of the phenomenal growth of undergraduate study abroad must take account of the blunders and failures, of the perplexities and the unsolved problems. Yet there is enough evidence at hand to justify the faith of the pioneers in the field that foreign study programs, if well planned and conducted, can be a very good thing. The development so far has been characterized by such vitality and imagination that one may hope that the many difficulties will be surmounted smoothly and that this new instrument of education will prove increasingly effective in preparing our students to live in the world which they inherit.

⁴ Carnegie Corporation of New York, *Annual Report for 1938*, p. 35.

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NEW DIMENSIONS
in Higher Education

Number 7

Quest for Quality

Some Models and Means

by
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FOREWORD

THE TASK of providing quality education for an increasing number of students may yet turn out to be of value to higher education. The pressure of enrollments may impel institutions to examine critically some of their long and uncritically held assumptions about the nature and organization of the teaching-learning process. They may be encouraged to try out new methods and new programs designed to improve both what the student learns and the way he learns it.

This report, the seventh in the series of studies on "New Dimensions in Higher Education," summarizes research designed to compare the effectiveness of independent study and the more traditional methods of college instruction as they are related to student learning; and it describes some of the new curriculum patterns which are being inaugurated to improve instruction. A number of experimental programs are described in sufficient detail to give interested readers a view of the purposes and potentialities of these programs, both in terms of the quality of the student's education and in terms of economy in the use of college teaching resources. It is hoped that the report will be useful to college administrators, faculty, and board members as they seek to improve the quality of education within their own institutions.

The U.S. Office of Education wishes to express its appreciation to Dr. Samuel Baskin of Antioch College, who prepared this report. His position as director of Antioch's program of educational research has kept him in close touch not only with his own institution's adventures in higher education but with the experimentation of many other colleges and universities as well.

Our thanks also go to the officers of the Fund for the Advancement of Education and to the Carnegie Corporation for making their files available in the preparation of this report, and to Chester L. Neudling and Lanora G. Lewis, of the Office of Education, for editorial assistance in the preparation of the manuscript.

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QUEST FOR QUALITY

I. Introduction

EDUCATORS who have had more than their share of anxious moments in recent years as they have read reports of the impending flood of college students are now beginning to wonder whether the panic, or at least near panic, wasn't a good thing after all. For today, many colleges and universities, pressed by a new concern for achieving quality in the face of increasing numbers of students, have begun to examine critically some of their long held assumptions as to the nature and organization of the teaching and learning process. It is an examination that has brought with it a new surge of experimentation and a new series of developments in higher education.

The report presented here attempts to describe some of these newer developments. It presents first a review of the new programs in independent study (in which independent study is viewed as a way of learning for all students and not as a special opportunity for abler students only); and it moves from this description of the independent study program to an overview of some of the newer experimental college programs.

It has not been possible within the confines of this report to review each of the developments that have come to the attention of the Office of Education. The report is not intended as a study in depth of the many projects presently under way, nor is it intended as a formula for achieving quality and quantity in higher education.

This is an "idea" paper. It is primarily descriptive in nature and seeks to present program directions and developments. The intent in the selection of particular programs for review is to illustrate the nature of such programs and to convey something of the potential these newer ideas may hold for higher education in the years ahead.

II. Putting the Student on His Mettle: The New Programs in Independent Study

"Nothing seems to surprise foreign educators so much," Clarence Faust, President of the Fund for the Advancement of Education, has

commented, "as our insistence upon the routine of courses in higher education."¹ He reports one visitor as saying, "You seem to treat college students just as they had been treated in high school and indeed as they had been treated in grade school. At what point do you begin to expect the acquisition of intellectual maturity on the part of the students?"

Educators have long bemoaned our practice of "spoon feeding" college students. We operate by and large on the theory that learning can take place only when students attend classes for a certain number of hours and over a certain number of weeks. Education comes in "packages"—it may be a 3-credit package where the student's presence may be expected in regularly scheduled class sessions over a period of 12, 13, or 15 weeks; or it may be a 5-credit package, with the student expected to be in attendance for at least 60 hours of regularly scheduled class time. But regardless of the size of the package, credit for learning (and learning itself) is assumed to bear a close relationship to the frequency with which the student sits in the classroom. The accumulation of a total of 120 or so of such credits signifies that the student has "learned" and has thereupon become eligible for the bachelor's degree.

A review of recent developments in higher education offers good evidence that many colleges and universities are beginning to do more than challenge this "packaging theory of learning." A May 1959 report of the Fund for the Advancement of Education lists 16 institutions which, since 1956, have been experimenting with the use of new programs of independent study as part of their regular teaching procedures. These institutions include Antioch College, Carleton College, the University of Colorado, Duke University, Goddard College, Grinnell College, Marquette University, the University of Michigan, Morgan State College, the Woman's College of the University of North Carolina, Oberlin College, the University of Omaha, Pennsylvania State University, Rutgers University, Vanderbilt University, and the State College of Washington.² Several of these studies are noted in the material which follows, and three of these programs, those of Oberlin, Antioch, and Vanderbilt University, are reviewed in somewhat more detail. The material has been prepared to illustrate the nature of these programs and the implications they may have for the problems of quality and the better utilization of college teaching resources.

¹ Clarence Faust, "The Years Ahead in Higher Education," in *Transactions of the Ohio College Association*, Columbus, Ohio, The State University, April 1957.

² *Better Utilization of College Teaching Resources*, a report by the Committee on Utilization of College Teaching Resources. New York. The Fund for the Advancement of Education, May 1959.

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First, a word on definition. There is, of course, nothing new in the proposition that colleges might employ independent study as a way of helping students enrich and accelerate their programs. In *Independent Study in the United States*, Bonthius, Davis, and Drushal report on a number of such programs.³ These programs, however, have long been held to be the special prerogative of the superior student. What is new in the recent experimentation is the use of independent study as part of the teacher's regular classroom procedures and its employment with all students within a particular course. Independent study is defined, within the context of these experiments, as independent work or reading, sometimes on one's own, sometimes in small groups, but with such work taking place in the absence of the teacher and *in lieu* of certain regularly scheduled class meetings.

The nature of the experimentation on independent study varies from its use in a single course in American history, as was the case at the University of Omaha, to its employment in 15 courses in the physical sciences, social sciences, and the humanities (Antioch); from the use of individual or "lone wolf" methods of independent study (Morgan State College, Carleton College, Vanderbilt University, and the State College of Washington) to the use of team and small group approaches to learning independently (Antioch, Oberlin, and Pennsylvania State University); and from the use of independent study arrangements in which students were expected to work independently over a substantial block of time with no formal classroom contact with the instructor (Carleton, Oberlin, and the University of Michigan) to arrangements under which students met in regularly scheduled class sessions throughout the course, but where the number of such weekly meetings had been reduced (Grinnell, Marquette, and the Woman's College of the University of North Carolina). In all instances students were expected to work independently for at least a certain portion of the term, and in all cases the procedures were applied to all students in the particular course under study.

Oberlin College designed a study to test the hypothesis that students participating in freshman level courses in mathematics, zoology, and psychology, and working independently of their instructors for one-third of their regularly scheduled class time would learn as well as a comparable group of students who met their instructor for the usual number of regularly scheduled class meetings. Its objective was two-fold: (a) to see whether students could be helped to take a greater share of responsibility for their own learning (and thus improve the quality of their educational experience), and (b) to see whether, by

³ Bonthius, Davis, and Drushal and collaborators, *Independent Study in the United States*, New York, Columbia University Press, 1957.

this arrangement, the college might be able to make important economies in the use of its instructional time.

Experimental and control groups were set up for each of the courses under study, with groups matched on certain variables deemed relevant to the purposes of the experiment (scholastic aptitude and course knowledge at the time of taking the course). Both experiments¹ and control groups were held responsible for the same course objectives, studied the same subject matter, and took common examinations, with the principal difference being in the amount of time spent in the classroom with their instructors.

"As far as conventional measures of course performance go," the Oberlin experimenters report, "the experimental and control groups appear to have learned equally well."⁴ No significant differences in learning were found between those taking a course by the usual lecture-discussion method of instruction and those taking the course by the experimental procedures (averaging one-third less class contact time with the instructor). The results held true for each of the courses under study; they held true when different measures of learning (content examinations, thought questions, and essay examinations) were employed, and they held true when individuals at various levels of academic ability were compared. In only one instance did the results begin to approach significance. This one case was in the course in mathematics where a difference which could be expected to occur by chance only 13 times in 100 was found in favor of the experimental group. This difference was on a test of "learning resourcefulness" which was designed to measure student ability to handle problem situations not covered in the course itself.⁵

While each of the instructors reduced his class-contact hours by at least one-third when teaching by the experimental method, the analysis of the data regarding "the more efficient use of instructional resources" needs to be viewed from more than just this perspective of actual time spent in class by instructors. For the new methods posed other kinds of time demands on the instructor in the planning and organization of the new teaching conditions, and in the preparation of syllabi, study guides, special reading lists, and other materials to be used by the independent study groups. Taking note of these factors, the Oberlin study reports some, but no substantial, savings in time during this first year of its experimentation. The experimenters expect, however, that considerable savings in time would occur once instructors had developed a backlog of experiences in teaching by these newer methods.

⁴ "Report on Independent Studies Experiment at Oberlin College," Oberlin, Ohio, 1957-58, p. 14.

⁵ *Ibid.*, p. 11.

The Oberlin researchers suggest several directions for further research, chief of which is the relationship of various attitudinal and personality factors to student achievement in learning. While suggesting that these factors may hold particular relevance for future experimentation in independent study, the report notes that

* * * there is nothing in the present data to suggest that normal progress of college level students is interrupted or interfered with by an independent studies procedure. * * * The methods of instruction reported here ought to work reasonably well in most college situations.*

Antioch College is now in its fourth year of experimentation with independent study. It has employed a variety of approaches to independent study in its use of periods of independent reading, individual study, team and small group methods, and combinations of individual and small group procedures in independent work.

Five courses were included in Antioch's first year's experiment (a course in English literature, a course in American history and civilization, a course in the history of Western art, and an introductory and an advanced course in sociology). Eight courses were included in the study of 1957-58 (two courses in the physical sciences, an introductory course in geology, a course in American government and politics, a course in anthropology, a course in present-day religion, a course in reflective thinking, and one in the history of Western art course). A comparable number of courses were included in the 1958-59 study, and several additional courses in psychology, business administration, and history were added to the study for 1959-60.

Experimental and control groups were set up for all but three courses under study, with the same instructor teaching both the experimental and control sections and with both groups matched on a number of variables including general intelligence, age, sex, year in college, and background information at the time of taking the course. Both experimental and control groups were to cover the same course material and were held responsible for the same course objectives as outlined in previously prepared syllabus material. The principal difference between the groups was in the use of the independent study procedures with the members of the experimental groups, and in the reduction of class-contact time of these groups by amounts ranging from 30 to 60 percent. Thus the members of the experimental courses averaged 20 to 30, and in some instances 40, fewer contact hours with the instructor than did the students who were taking the course by the lecture-discussion method of instruction and meeting regularly with the instructor. Achievement of course objectives was measured in a variety of ways, including multiple choice and other kinds of

* *Ibid.*, pp. 22, 24.

content-learning examinations, laboratory and special task assignments, essays, and tests of judgment and critical thinking.

Commenting on the results of their first year's study, the Antioch research team has this to say :

Pages of data relating to differences in anticipatory gains, direct gains, accumulated gains, and over-all gains can be summarized very briefly by saying simply that there is no evidence that would lead us to reject the null hypotheses. Differences in control and experimental groups reflecting different treatments * * * are by and large insignificant * * *.

The Antioch experimenters report similar results for their studies of 1957-58 and 1958-59. "No pattern emerges," reads their report for 1957-58, "favoring any teaching procedure [lecture-discussion or independent work] as the way to help the student gain more or produce work of a higher quality."⁸

While noting some savings in instructional time, the Antioch report, as was the case at Oberlin, calls attention to the new time demands posed by the experiment in organizing and preparing for the autonomous study methods: "Teaching is apparently like an iceberg—the major part of the work, preparation, and evaluation takes place away from the classroom, invisible to the students."⁹ There are indications, however, that some real time savings may accrue once the instructor has prepared the special materials for the independent study groups. The most striking example of this (although this case was the exception rather than the rule) was in the two philosophy courses included in the 1958-59 experiment, where the instructor "saved up to 57 percent of the total time which normal procedures would have required for the number of students enrolled."¹⁰ In one of these instances, in a course in present-day religion, the instructor was able to teach 80 students by the experimental methods as well as a group of 20 students by the conventional method, using only *half* as many class contact hours with the group of 80.

Vanderbilt University undertook its research program in independent study during the summer of 1958. Although controls were employed in only 2 of 28 courses studied, the research is reviewed here on account of the spread of courses included in the experimentation, and because it represents one of the few instances in which a major block of courses was offered by the independent study method during any one time. While Antioch has done its experimentation in 15 courses, no more

⁸ Ruth Churchill, "Preliminary Report on the Reading Plan Study," Yellow Springs, Ohio, Antioch College, Sept. 1957, p. 6.

⁹ "Experiment in Independent Study," Yellow Springs, Ohio, Antioch College, Sept. 1958, p. 21.

¹⁰ *Ibid.*, p. 30.

¹¹ Morris Keeton, "An Experiment with Independent Study Methods in Philosophy," Yellow Springs, Ohio, Antioch College. (Paper presented at Western Conference on the Teaching of Philosophy, May 1959.)

than 6 or 7 of these were taught during any one term; in contrast, Vanderbilt's experiment involved a total of 21 faculty members from a summer faculty of 54. The schedules used in the independent studies programs, which included courses in accounting, English composition and grammar, German and Spanish literature, history, philosophy, political science, and psychology, reduced class time by 25 to 50 percent. Several kinds of programs were employed, with the most common one calling for "four 1-hour class sessions in alternating weeks with the remaining weeks devoted to independent study."¹¹

While calling attention to the limitations of their data, in that most of the analyses involved gross comparisons with classes of a previous fall or spring semester, the Vanderbilt investigators report:

In sum, such evidence as is available supports the hypothesis that students of average or superior abilities perform as well and learn as much on reduced schedules as on standard * * *. It is fairly clear that most students believe it to have had a beneficial effect on their habits of independent study. A majority estimated that at worst they had not learned less than they were accustomed to under conventional arrangements, and fragmentary evidence of an objective character does not prove them wrong.¹²

Commenting on the question of better use of instructional time, the report notes:

With three exceptions, it was reported that the schedules in use permitted more research, writing, or other professional activity than would have been possible on standard schedules * * *. For most faculty members * * * there appeared to be a net gain in hours. At least as important as this economy was the fact that the reduced schedules adapted especially well to efficient usage of available time: long periods could be reserved *en bloc* for research and writing. In this respect, the most beneficial schedule was the one which arranged all meetings in alternate weeks.¹³

The foregoing studies review in only partial detail 3 of the 16 researches on independent study noted in the report of The Fund for the Advancement of Education. In summarizing this whole grouping of studies, the report states:

Almost without exception, the customary academic examinations showed that students in the independent study experiments learned at least as much as the students who had regular class work. Rarely were there statistically significant differences in the performance of the experimental and the control groups on regular or special examination.¹⁴

The report also indicates that while students at first expressed dissatisfaction with these methods of instruction in that they felt they

¹¹ Letter, January 13, 1959, from Harvie Branscomb, Chancellor, Vanderbilt University, to the Fund for the Advancement of Education.

¹² "A Report on the Vanderbilt University Experiment," Nashville, Tennessee, Vanderbilt University, summer 1958, p. 6.

¹³ *Ibid.*, p. 5.

¹⁴ *Better Utilization of College Teaching Resources*, op. cit., p. 18.

were "missing something" because of the diminished contact with faculty members, student satisfactions grew as the year progressed, and several instructors reported that students who had experience with independent study through the entire year preferred it, while the control groups preferred the traditional method to which they were accustomed.

Commenting on the second of these questions raised by the studies, namely whether they may hold significant impact for colleges in the more effective utilization of their teaching resources, the report notes that

* * * the results are more potential than realized. The experimental program naturally involved considerable extra work in the initial stages and, if preparation of syllabi and planning for independent work were taken into consideration, there would be few places which could report actual time saved in the first year of experimentation. Nevertheless, the omission of certain class meetings did result in [some] saving of time during the year * * *.¹⁵

There is still, of course, much that needs to be done before we can really begin to evaluate the full impact of these independent-study teaching procedures. For one thing, we do not know enough about how to teach by these newer methods, nor how we can best train students for working on their own. For another, we do not know enough, as the Oberlin and Michigan experimenters remind us, about student and instructor needs and personality patterns and what role these factors may play in the teaching-learning process. And we do not know enough about our measures of independence (although the Antioch and Oberlin experiments have made some moves in this direction through their use of "learning resourcefulness" instruments) so that we might be able to determine better the degree to which these studies really contribute to the development of student initiative and independence in learning.

The research on teaching effectiveness reminds us that we have yet to arrive at a *formula* for good teaching. Teachers teach well by many different methods. Elements of course content, background, group make-up, and instructor as well as student satisfactions bear significantly on this question of how to teach.¹⁶ The new programs in independent study are not intended as a panacea for higher education, nor are they intended as a glorified "do-it-yourself plan" which works by simply turning the student loose on his own. Quite the contrary—the instructor's job may be different but it is no less difficult. The teacher who employs these independent study procedures has a critical

¹⁵ *Ibid.*, p. 19.

¹⁶ For a summary of the research on teaching effectiveness, see the second issue of this series, *Effectiveness of Teaching*, by Winslow R. Hatch and Ann Bennett; and Phillip Jacobs, *Changing Values in College*, New Haven, Conn., The Edward W. Hazen Foundation, Dec. 1956.

role to play in selecting and structuring learning experiences so that the maximum effect is achieved and the student's own resources for learning are used to the fullest.

The question is not whether the teacher should be eliminated from the teaching process, but rather: *To what kinds of learning experiences should the student be exposed?* What combination of classroom time and independent work make for most effective learning? The data from the present experimentation in independent study seem clear on this point: Students are able to learn as well with much less class time than we have been accustomed to require of them. As a minimum, the evidence presses for a much closer examination of the "class hour formulae" by which we teach.

III. *Working from the Ground Up: Proposals for the Establishment of New Programs in Higher Education*

Addressing the Association for Higher Education, which had devoted its eleventh annual meeting to the "crisis of numbers" and the problems of quality in higher education, Harold Taylor had this to say:

All the evidence that I have been able to collect indicates that if there were not a single student added to the present enrollment of American colleges and universities during the next ten years, we would have exactly the same need for scrapping our present system of instruction and inventing a new one * * *. What we have now is a huge mechanical system for disseminating information. Once the information is conveyed, it is checked and academic credits are awarded for accuracy in recording * * *. The present system is built on the assumption that learning occurs in one dimension—the dimension of memory. It assumes that the rewards of learning are not to be found in the pleasure and joy of the knowing or in the achievement of belief, not in finding a sense of personal and intellectual identity, but in receiving credit, social status, a higher income, and an exemption from the necessity of further study or intellectual development * * *. The present system of lectures, text books, survey courses, standard requirements of subject matter, examinations, and numerical grades * * * fails to touch the inner consciousness of the student or to deal with his motivations, his emotions, his aims, and his needs.¹⁷

Whether the crisis of numbers has in and of itself made the difference and whether the new movements on the educational scene will eventually really "touch the inner consciousness of the student" are still other questions. Be that as it may, a number of institutions have already begun something of the kind of program scrapping that Dr. Taylor suggests. Prominent among these are the new college plans already under way at Michigan State's Oakland College, Wayne State's

¹⁷ Harold D. Taylor, "The World of the American Student," *Current Issues in Higher Education*, Washington, National Education Association, 1956, pp. 22, 23, 24.

Monteith College, Dartmouth, Bard, Goddard, and Austin Colleges, and Wesleyan University, and the new college programs that have been proposed by Hofstra College and by the officials of Amherst, Smith, and Mount Holyoke Colleges, and the University of Massachusetts. While each of these programs has as its foremost concern the improvement of the quality of the student's educational experience, it also holds import for (and in several instances finds its impetus in) the problem of serving increasing numbers in higher education. In the five programs reviewed in this report, the material is based on original prospectuses outlining the plans of these new college programs. While there have since been some modifications in the prospectuses, the data are considered to be illustrative of the broad outlines and purposes of these programs.

Monteith College at Wayne State University entered its first class in the fall of 1959. The program at Monteith departs from the more usual organization of the college curriculum in the distribution of its general education requirements over the student's 4 years in college, in the provision for a degree in general education for those students who do not wish to major in a specific field, and in its use of independent study procedures early in the student's career.

Under its plan of general education, students will be expected to take work in the natural sciences, the social sciences, and the humanities during their junior and senior years as well as in their first 2 years. The program is built around a series of 4 basic courses extending over several semesters and culminating in a year-long Senior Colloquium. It would require of all students a common core of experiences so organized as to provide a broad interdisciplinary approach to both general and field education and an exposure to a wide variety of disciplines. The offering of an undergraduate degree in general education represents one of the first such degrees in this country.

Monteith hopes to employ a variety of means for developing student independence in learning. For example, the student will be asked to take the terminal segment of one of his first three basic courses without attending the meetings of discussion groups of the course. While he will be admitted to lectures, given a syllabus, and have access to occasional advice, he will be asked to "develop his own capacities for intellectual initiative and independent work by completing the course without the help which attendance at the meeting of a small section would have given him."¹⁸ It is expected that each student will choose for himself which of the courses he wishes to

¹⁸ "An Experimental College at Wayne State University," Detroit, Michigan, Wayne State University, 1958, p. 11.

terminate in this fashion. After he has successfully handled a segment of his course work in this way, he will no longer be required to attend class meetings of any of his elective courses, though such meetings will remain open to him.

Still another independent study device appears in Monteith's plans for its year-long Senior Colloquium, the last of the required basic courses. The colloquium will be offered in two sections each semester. Classes will meet but once in 2 weeks. A student will enroll in both sections in each semester of his final year, but will attend the meetings of only one of these sections. Tape recordings of the meetings of the other section will be available to him if he wishes to use them. At the end of the semester, the student will be examined equally on the work of the two sections. This pattern will be continued for the second half of the Senior Colloquium, so that in effect the student will be expected to cover one-half of his required work in his senior year with no formalized instruction. While he may, of course, seek conferences with any member of the staff and thus secure additional help, he will not be allowed to "convert such occasional conferences into private systematic tutorial instruction."¹⁰

Through its curricular stress on broad interdisciplinary approach to general education, Monteith hopes that certain "core experiences" and the development of independence in learning will enable students to achieve a new level of quality in the educational program. It hopes further that its careful organization of the program, with its planned use of lectures, student-led seminars, and independent study, will enable it to make far more efficient use of its instructional staff and facilities than might usually be the case.

Goddard College centers much of its revised curriculum around the use of independent study, individual research projects, and student field experiences. The student attends regular classes during his first year and moves toward an increasing degree of independent work in his later years.

Nine areas of study have been defined as central to the student's general education. These areas include study and field work in human relations, social psychology and anthropology, languages and culture, the physical sciences and mathematics, the biological sciences, the arts, education and the community, American society, and the English language. The student takes three courses each semester of his first year. These courses are planned around large areas rather than narrow subject matters, with the program organized so that the student devotes a full day to the work of a particular course. In his

¹⁰ *Ibid.*, p. 29.

last term, the student takes no courses. Between these beginning and end points, students plan with their advisors flexible programs which permit a wide variety of course work, participation in off-campus jobs, and independent study.

As part of its program, the college plans to establish a learning aids center "to extend the traditional functions of the library as a place for individual learning and make possible the study of many subject matters with little teacher assistance."²⁰ The center is planned to include teaching machines, a file of learning resources such as chemistry and physics courses on film, documentary materials in the physical and social sciences, language records and tapes, slides of art works, recordings of poetry and drama, and taped lecture material, along with facilities for self-operable films, slides, and recording equipment. Students will work at the learning aids center either on their own or in groups.

Under its new program the college will operate 12 months of the year with students permitted to use their 2-month winter work period and their 2-month summer vacation period in ways which will enable them to enrich and accelerate their programs at the college. For example, a student might complete a research study during his non-residence work term experience and thus extend his fall semester by 2 months, while still another student might take advantage of the July-August vacation period to earn academic credit for a project in the college's community service work camp program. The college expects, as faculty and students learn to take advantage of the flexibility of the new calendar, "that perhaps one-fifth of the students enrolled will be absent from the college all of the time and that a fifth might be continuing work at the college during what is now the summer vacation and the winter nonresident term."²¹ It is hoped that under these conditions the college would be able to enroll nearly 20 percent more students than is now the case, with no increase in facilities.

Bard College, in the search for quality and better utilization in its experimentation, uses a newly organized winter session curriculum, a new plan of nonresident credit for independent study, and employment of a year-round calendar that will permit some students to complete their programs in 3 years. Under its new plan, Bard will add 2 half semesters of 7 weeks each to its present 2-semester system of 15 weeks each. One of these half semesters will run concurrently with Bard's Winter Field Period, from early January to late February; the other will be a summer session running from mid-July to early September.

²⁰ "An Experiment in College Curriculum Organization at Goddard College." Plainfield, Vermont. Goddard College, 1959, p. 7.

²¹ *Ibid.*, p. 6.

Bard sees the short sessions of its new program as offering an opportunity for radically new teaching experiments. It expects that, as these programs develop, they will have "a profound effect on Bard's total educational program."²²

The midwinter course offerings are to be organized around a single theme which will be approached intensively from a variety of disciplines. The first subject chosen for study is "The Breakdown of the 19th Century World View," which will be studied from the disciplines of biology, physics, religion and philosophy, economics, literature, and the arts. The College hopes to develop still other central offerings designed to "stimulate the development of interdisciplinary work and carry Bard further toward the goal of a unified and concerned community."²³ While several such offerings might be available during any one midwinter session, students would be permitted to enroll in only *one* at a time. Each course would carry 8 academic credits, with students meeting in three 2-hour seminar sessions each week. In addition, all faculty members participating in the course would take part in one general seminar session each week.

The summer session will at first offer a group of more or less conventional courses with the twofold purpose of serving as a basis for comparison with the midwinter session and enabling the college to attract students from other institutions. Later, these summer session offerings may take on the format of the midwinter program.

Through a new program of nonresident credit for independent study, Bard hopes that it may help students to develop more effective habits for learning independently. It is expected that the independent study programs may be of several sorts. They may involve an individual research project, a special assignment that follows on the heels of a first semester course or is sandwiched between the two semesters of a specially designed year course, a work experience which is combined with a project, or "a special work experience evaluated in advance as possessing special academic merit."²⁴

Under the new calendar Bard's academic plant will be in operation for a total of 44 weeks, as compared with its former use of a 30- to 32-week school year. The plan is highly flexible and will allow students to complete their work in a regular 4-year sequence or to accelerate to 3 years through the use of independent study and attendance in the abbreviated winter and summer sessions.

²² "Release on Bard College Program," Annandale-on-Hudson, Bard College, July 1959, p. 4.

²³ *Ibid.*, p. 4.

²⁴ W. Boyd Alexander and Alonzo F. Myers, "Evaluation of an Experiment in Off-Campus Independent Study at Bard College," Annandale-Hudson, Bard College, May 1959, p. 12.

Wesleyan University thinks it may have found a way of staying small while getting larger. Its program for improving quality and handling larger numbers takes quite a different turn from some of the other new college plans in that it builds on an expansion of personnel and facilities. It expects that its new plan would enable the college to increase enrollment by as much as 40 to 50 percent in the next decade.

Under its plan Wesleyan proposes to establish a federation of small colleges within the framework of the university, each with its own faculty, student body, and course offerings. The colleges would range in size from 100 to 250 students, with faculties of about 10 to 20, or one teacher to every 10 or 12 students. Each college would be organized around a particular area of knowledge with its faculty chosen to represent as many different disciplines as possible. Each would have its own director and governing committees and would administer its own educational unit. There would be a College of History, Philosophy, and Comparative Literature; a College of Creative Arts; a College of Behavioral Sciences; a College of Physical Sciences; and other colleges centering on broad programs in various areas of concentration. In addition to these separate colleges organized around different fields of concentration, the proposal also envisions a more general University College, which might function as a service unit to the other colleges, with offerings in such areas as philosophy, religion, mathematics, foreign languages, and English.

During his first year, the student would take much of his work in the University College but would also draw on courses in the other colleges. His field program would begin with his second year, when he would move into one of the separate college units. From his second to his senior year, the student would take courses and do independent work in his area of concentration as well as in an area of supplementary studies and general education. The bulk of this work would occur within his own college, although he would be encouraged to draw on the offerings of other colleges in pursuance of his overall goals in general education. Much emphasis would be placed on the use of small group and tutorial approaches to learning. Each student would work closely with a tutorial committee, with most classes and seminars arranged so that all members of the student's tutorial committee would have taught most or all students in a particular program over a substantial period of time. The student would have one member of the tutorial committee as his regular tutor, but all members of the committee would have an opportunity to work with the student during the course of his college years.²⁵

²⁵ A Report of the Subcommittee of the Educational Policy Committee of the Faculty. "The College Plan," Middletown, Conn., Wesleyan University, Dec. 1958, p. 2.

The New College Plan sponsors think that their proposal will make it possible to provide "education of the highest quality . . . with a faculty half as large, in proportion to the student body, as is now customary in institutions of the first rank."²⁶ The plan proposes the creation of a new type of college to be jointly sponsored by the colleges of Amherst, Smith, Mount Holyoke, and the University of Massachusetts. As a cooperative enterprise it represents still another direction in the search for more effective as well as more efficient ways of learning.

The proposal of this 4-college group states:

The New College Plan is based on the conviction that the average student entering one of the better colleges is capable of far more independence than he now demonstrates * * *. It will be a major goal of the college to develop and sustain a style of life which will make it habitual for students to work together in groups and individually without constant recourse to the faculty.²⁷

The sponsors of the New College Plan propose to organize the curriculum to train students to educate themselves and to develop in the students a capacity to continue their education throughout their lives. The freshman program is to be organized around specially designed seminars in which the student will be expected to gain experience in independent work; and, over the student's 4 years, student-led seminars, discussion groups, and other devices will be used in an attempt to help students develop skills in working independently.

The New College plans to limit its course offerings to a total of only 50 courses each semester. While these offerings will be supplemented through the collateral use of course offerings of each of the sponsoring institutions, the New College expects students "to master subjects chiefly on their own initiative * * *. Completeness will not depend on the course offerings, but on the student, since he is made responsible, as he matures, for organizing his study so as to master [his] subjects."²⁸

The student will have a three-course program instead of the customary five or four, and faculty members will give only one lecture course at a time, with the time saved from course work to be used by faculty and students for the development of independent projects. The freshman level seminars (averaging about 12 students each) will be designed to bring the student into close contact with the work of scholars and to provide him with an intensive but limited exploration of a single subject matter area. It is expected that the student will quickly gain experience in working independently because a signifi-

²⁶ C. L. Barber, Donald Strehan, Stuart M. Stoke, Shannon McCune, *The New College Plan: A Proposal for a Major Departure in Higher Education*, Amherst, Mass., University of Massachusetts, 1958, p. 7.

²⁷ *Ibid.*, p. 9.

²⁸ *The New College Plan*, op. cit., p. 12.

cant portion of the seminar work will be planned around independent projects "for which the freshman will have or can acquire the necessary frame of reference, and in which he will encounter fundamental problems of the topic and the discipline."²⁸

In the main, upper-class courses are to be organized as lecture courses (often averaging only one or two meetings per week) and supplemented by seminar work, sometimes directed by the lecturer, but usually under student leadership. It is hoped that these adjunctive seminars, along with the student's freshman seminar experiences, will accustom the student to a new style of life in which independent work will be normal and expected.

The calendar of the New College Plan would be organized on a three-term basis, consisting of fall and spring terms of 14 weeks each, and a specially planned midwinter term of a month at which time all students would join in studying two courses designed to provide common intellectual experience. One of these courses would deal with a major aspect of Western culture, the other with study of a non-Western culture, with the subjects changing from year to year, so that a wide variety of subjects would be covered over a 4-year span. The emphasis on independent work would continue during this period. All regular courses and projects would give way during this midwinter term while the college "turns itself into a conference * * * as it joins in a common intellectual enterprise."²⁹

By giving up the attempt at a complete course offering and using the specialized courses of the sponsoring institutions, the authors of the New College Plan hope to achieve "significant economies in dollars and, more important, in the number of teachers required."³¹ They estimate that under this plan it will be possible for a faculty of 50 to give a first-rate education to 1,000 students. In addition, the New College Plan hopes to achieve still other economies in making use, where it can, of library, recreational, and specialized scientific facilities already existing among the four institutions.

New college programs, such as those described in this report, reflect a variety of new directions: increased emphasis on independent study; greater use of field and off-campus experiences; emphasis on general education; use of freshman seminars, tutorials, and other small-group approaches to learning; emphasis on the more intensive exploration of certain subject-matter areas; reduction of the number of courses a student takes at any one time; use of common or core learning experiences for sections of the student body, and in some cases the entire

²⁸ *Ibid.*, p. 18.

²⁹ *Ibid.*, p. 24.

³¹ *Ibid.*, p. 4.

student body; increased use of learning aids such as films, tape recordings, and other audiovisual devices; cooperative use of facilities; and use of summer sessions and special winter terms to enrich as well as accelerate the student's educational experience.

It is much too early, of course, to attempt to surmise what will happen with these new college plans. The programs at Monteith, Goddard, Bard, and Wesleyan are just underway, having entered their first freshman classes in the 1959-1960 school year, and the New College Plan of the Amherst, Smith, Mt. Holyoke, and University of Massachusetts group is still in the study stages. Some mistakes will no doubt be made. What is significant about these movements, however, is that higher education is "on the dare"—and has really begun to shake itself loose from what Dr Taylor and others suggest have been too long established and too deeply ingrained patterns of behavior.

IV. Conclusion

The preceding material barely touches on the new developments presently under way in higher education. There are, of course, some dangers in these new movements; for it is possible that much that is educationally worthless, if not harmful, could pass under the guise of experimentation. While few would argue for experimentation for experimentation's sake, the fact of the matter is that we have too often tended to rationalize away the possibilities of, and the need for, taking a closer look at the nature and organization of our learning processes.

The rationale for the present experimentation with the new programs of independent study and with the new college programs lies in several bases: in the college's desire to find new ways of learning and to improve the quality of the student's educational experience; in the desire to reduce the "detail burden" of the instructor and provide new avenues for his own research and development as a teacher; and in the "press of numbers." Certainly much of the impetus for the experimentation now going on grows out of the present emphasis on the more effective utilization of teaching resources. It would be a mistake, however, to view this goal as the sole objective of these experiments, and it would be a mistake to assume that certain kinds of economies in the organization of our teaching and learning procedures will necessarily be harmful to the achievement of quality. There is, in fact, some evidence to suggest that, rather than representing mutually contradictory goals, these objectives may well go hand in hand.

There is much evaluation that needs to accompany the present experimentation. There will be some "backing up" and some reworking of designs and ideas. The newer developments, however, hold within

them a great deal of excitement and potential for higher education, for they carry with them the bold challenge of discovery of new and perhaps more effective ways of learning.

What may have appeared to be higher education's crisis may yet turn out to be its best opportunity.

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NEW DIMENSIONS
in Higher Education

Number 8

Advanced Standing

by

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FOREWORD

AMERICAN EDUCATION is committed to the maximum development of the talents of every student, as an objective and an ideal. While the need for these talents is growing, the task of their full development becomes more complex as enrollments increase and as individual differences in background and preparation become greater among students. The most promising avenues of progress toward the goal of maximum individual development seem to be those which provide flexibility in the rate, depth, and breadth of study. Advanced standing is one of several means used by institutions to provide this flexibility. Related practices, such as early admission and credit by examination, are to be treated in later issues of the series "New Dimensions in Higher Education."

This publication shows how organized advanced standing programs provide flexibility by permitting academically able students to take college-level work during their high school years and to receive appropriate placement and college credit after their admission to college.

The two techniques for advanced standing treated here are: (1) the Advanced Placement Program administered by the College Entrance Examination Board, whereby students receive advanced standing in college on the basis of college-level work which they have completed in high school, and (2) the various plans which enable superior students to take courses in nearby colleges and universities while they are completing their high school programs.

The major sources of data have been journal articles, materials on file at the College Entrance Examination Board, and consultation with persons prominent in the field. Valuable assistance was also provided by the following representatives of the College Entrance Examination Board: Jack W. Arbolino, director of the Advanced Placement Program, David A. Dudley, and Charles R. Keller, former directors, Samuel A. Kendrick, vice-president for examinations and research, and Paul Hazlett, research associate.

References to advanced standing programs at individual institutions are intended to be illustrative only, since it would not be within the scope of this report to describe all of the growing number of such programs. A first draft of this publication was submitted to directors of advanced standing programs at a number of insti-

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tutions. Their comments and those of others familiar with programs or research in the field have been incorporated in the final draft.

Editorial assistance in the preparation of the manuscript was provided by Lanora G. Lewis of the Office of Education staff.

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Director, Higher Education Programs Branch

ADVANCED STANDING

WHILE ATTEMPTING to provide higher education for all who can profit by it, institutions are seeking to make available programs appropriate to a broad array of individual needs and individual differences. Because it is urgent that opportunities be provided for superior students to progress at their own rates, many educators and other citizens are examining critically those traditional curricular patterns based on conformity of individual progress to group requirements. For example, the Rockefeller report, *The Pursuit of Excellence*, recommends “. . . many educational patterns—each geared to the particular capacities of the student for whom it is designed.”¹ This suggests that the typical curriculum designed for groups of students progressing at the average rate is no longer adequate for all students and must either be supplemented or replaced with new techniques which provide greater flexibility in meeting curricular requirements.

During the past decade, there has been an expansion of efforts to provide challenging programs for superior students. Honors and independent study programs have increased, and many faculties are taking a new look at credit by examination, early admission to college, and advanced standing.

The pattern of advanced standing, with which this publication is concerned, has developed partially as an answer to some of the objections to early admission. Like early admission, advanced standing enriches the programs of superior high school students with college work; unlike early admission, however, it requires that the students complete high school programs before enrolling full time in college. On the basis of college-level work completed during high school years, the advanced standing students receive appropriate placement and credit according to the policies established by the institutions they enter. In other words, advanced standing students literally skip college work for which there has been adequate coverage during the high school years.

Advanced standing, as the term is used in this publication, is defined as the pattern which enables superior students to receive appropriate placement, credit, or both, on the basis of the college-level

¹ *The Pursuit of Excellence: Education and the Future of America*, Special Studies Project, Report V, Rockefeller Brothers Fund, Garden City, N.Y., Doubleday & Company, 1958, p. 32.

courses they have taken in high school. Accordingly, it embraces both the Advanced Placement Program administered by the College Entrance Examination Board and those programs administered by individual colleges and universities which admit superior students to college courses while they are finishing their high school work. Since the scope of this publication does not permit description of all of the growing number of advanced standing programs, institutional references are intended to be illustrative only.

The Advanced Placement Program

The Advanced Placement Program of the College Entrance Examination Board is an outgrowth of two studies financed by the Fund for Advancement of Education: the General Education in School and College Study and the School and College Study of Admission with Advanced Standing.

The first of these, a study of the academic records of 344 graduates of Andover, Exeter, and Lawrenceville who were members of the 1951 graduating classes of Harvard, Princeton, and Yale, was conducted by a committee representing the schools and colleges involved and resulted in the report *General Education in School and College*. The study revealed considerable overlap of subject matter in the general education programs of many capable students during the last 2 years of high school and the first 2 years of college. Based on their findings, the committee recommended "the adoption of a coordinated 7-year program for qualified students as an alternative to the usual 4 years of secondary school and 4 years of college leading to the B. A. degree."²

About the same time, the president of Kenyon College was promoting a plan designed to coordinate and enrich the general education of academically able students in the schools and colleges. The result was the experimental program known as the School and College Study of Admission with Advanced Standing, begun in the fall of 1952. Seven schools offered college-level courses during 1953-54 and 12 colleges agreed to grant advanced placement, credit, or both to students who performed creditably in the courses and on the examinations. The program continued as the School and College Study of Admission with Advanced Standing during 1954-55. It was renamed the Advanced Placement Program when the College Entrance Examination Board assumed responsibility in 1955-56.

One of the major features of the Advanced Placement Program is that the responsibility for providing an enriched and challenging aca-

² *General Education in School and College*. Cambridge, Mass., Harvard University Press, 1952, p. 112.

demic program for superior students is shared by the high school and the college. "Each must make substantial departures from well established routines to permit the individual students to break out of the customary lock step."¹ The high schools teach the courses; the colleges place the students and credit them with the work; and the College Entrance Examination Board coordinates the program.

Subject committees composed of representatives from the high schools and colleges have prepared suggested criteria and syllabi for the courses. The CEEB Advanced Placement Examinations, in which essay questions predominate, are given in literature and English composition, American history, European history, French, German, Latin, Spanish, mathematics, biology, chemistry, and physics. Each examination estimates the level at which the student should begin his college study. Committees of readers, representing both high schools and colleges, grade the essay questions and assign scores ranging from 5 (high honor) to 1 (failure). The Educational Testing Service scores the objective questions. The examination papers and interpretations, with the school's recommendations and descriptions of the advanced placement courses, are then sent to the colleges.

Articulation, or the lack of it, is an age-old educational problem. The Advanced Placement Program is making substantial contributions toward improved communication between high school and college. Teachers from both levels work together on the committees. In addition, they meet at the summer conferences sponsored by the program coordinators. Illustrative of the scope of this activity are the conferences which were held during the summer of 1960: for administrators, Lawrenceville School (N.J.); for biology teachers, University of Colorado; for chemistry teachers, University of Illinois; for English teachers, Smith College (eastern conference), Northwestern University (western conference); for history teachers, Stanford University; for foreign language teachers, Hotchkiss School (Connecticut); for mathematics teachers, Case Institute of Technology; and for physics teachers, Columbia University.

In 1960, Bowdoin College and the University of Denver independently sponsored Advanced Placement Summer Institutes in chemistry, the University of Michigan in Latin, and Yale University in biology, chemistry, mathematics, and physics. In addition, the New York State Department of Education financially supported Advanced Placement Workshops in American history at Vassar College, biology at Manhattan College, chemistry at Colgate University, English at Cornell University, and mathematics at New York City College.

¹ *Bridging the Gap Between School and College*, Evaluation Report No. 1. New York, The Fund for the Advancement of Education, 1953. p. 67.

The Growth of the Program

The Advanced Placement Program has increased from the 12 institutions originally participating to over 400 colleges and universities which subscribe to the principles of the Advanced Placement Program. This number represents slightly more than a fourth of the 4-year institutions of higher education.⁴ In 1955-56, 1,229 students from 104 high schools took 2,199 examinations and entered 130 colleges. In 1959-60, 10,531 students from 890 schools took 14,158 examinations and entered 567 colleges.⁵

Although the program has grown rapidly, the number of participating high schools is relatively small in comparison to the total number in the United States. The tendency for a large number of advanced placement candidates to enroll in a small number of colleges and universities is also a limiting factor. Thirteen colleges in 1958 and 18 in 1959 enrolled approximately half of the advanced placement candidates.

There are signs that this situation is changing. Interest has been generated by the growing number of universities participating in the Advanced Placement Program and some State education agencies are encouraging its use. In Ohio, the presidents of the 6 State-supported institutions have issued a statement endorsing the program, and 40 of the private and church-supported institutions have indicated their willingness to grant placement or credit. A full-time officer has been appointed to coordinate the activities of the program within the State. Working closely with the coordinator is the Ohio Council on Advanced Placement, an advisory committee of representatives from the colleges and universities. The program includes regional conferences for secondary school administrators and regional subject conferences for high school and college teachers.

The Oregon Council on Advanced Placement, formed in the spring of 1960, is composed of representatives from the high schools, colleges, State Department of Education, and associations of school administrators and teachers. The Council hopes to increase the number of Oregon high schools which offer advanced placement courses by helping them establish the courses.

In Arizona, the interest in the program by the University and Tucson school officials resulted in a 2-day conference held at the University in March 1958. An outcome of the conference has been the development of advanced placement course outlines through the cooperative efforts of University and high school teachers.

⁴ Based on the number of institutions responding to the Office of Education Opening (Fall) Enrollment Survey, 1959.

⁵ College Entrance Examination Board, *A Guide to the Advanced Placement Program, 1960-61*. New York, The Board, 1960, p. 8.

In one Pittsburgh high school, two professors from Carnegie Institute of Technology, one on full-time leave, taught the advanced placement courses in English and history during 1959-60, while the two high school teachers they replaced taught at Carnegie. The exchange was preceded by a 4-week summer planning institute at Carnegie for teachers of English and history.

Groups in New York, North Carolina, and Virginia are studying the Advanced Placement Program as one of the plans for enhancing the programs of superior or gifted students. The New York State Department of Education has approved the program as a plan for the education of the gifted and, as previously noted, sponsored Advanced Placement Workshops during the summer of 1960. The Governor and legislature of North Carolina appointed a commission to study programs for the gifted, including the Advanced Placement Program. The Virginia General Assembly passed a resolution to study the program as a method for encouraging capable students to work to full capacity.

An additional stimulus was given by the Rockefeller report, which recommends the Advanced Placement Program as one way to provide challenging study for young people of outstanding ability.⁶

College and University Policies

The changing attitudes of the colleges toward advanced placement make it difficult to keep abreast of current policies which vary from one institution to another. Of 360 colleges surveyed in the spring of 1958,⁷ 150 granted placement and 210 granted both placement and credit to students who had successfully completed advanced placement courses and had done creditably on the examinations. Of those colleges which granted credit, some placed restrictions on the amount but most granted the credit with no limitations.

The policy for granting credit runs the gamut from advanced placement with a positive declaration of "no credit" to the granting of as much as a year's acceleration. The colleges which have had the longest experience with the program seem more likely to grant credit without reservation. In many institutions, considerable variation exists among the departments with respect to advanced placement or the granting of credit. Thus, an institution may have a blanket policy, or it may have policies which vary from one department to another.

⁶ *The Pursuit of Excellence*, op. cit., p. 31.

⁷ David A. Dudley, "The Advanced Placement Program," *The Bulletin of the National Association of Secondary-School Principals*, Vol. 42; Dec. 1958, p. 3.

General policies in institutions include the following:

1. Placement in an advanced course with credit for the prerequisite.
2. Placement in an advanced course with no credit for the prerequisite.
3. Credit for one semester of the freshman course.
4. Credit for a parallel course.
5. Credit toward the general education requirements.
6. No credit but exemption from the general education requirements.
7. A limit in the amount of credit awarded.
8. Unlimited credit awarded.
9. The award of credit dependent upon the successful completion of one or two semesters of college.
10. Advanced placement or the award of credit validated by departmental proficiency examinations.

The following examples of practices at specific institutions illustrate this variety of policies. One of the various procedures at Yale University enables successful students to obtain exemption from one or more of the distributional requirements taken by all degree candidates; the exemptions may be converted into course credits at the end of the freshman year. The University of Michigan grants to successful advanced placement candidates credit up to a maximum of 16 semester hours of which no more than 8 may be in any one examination area. At Harvard, Princeton, and Yale universities, students who earn advanced placement credit in three or more year courses may qualify for sophomore standing. At Dartmouth College, sophomore standing can be achieved by students who earn credit for five or more term courses spread over at least three different subject areas. Columbia University grants advanced placement credit on the basis of the student's score on the Advanced Placement Examination and his college performance during the freshman year. The maximum amount of credit that may be earned is 24 points applicable to the 126 points required for graduation. The French, German, and Spanish departments of Ohio State University place successful advanced placement students in advanced courses but the award of credit depends upon their performance on the departmental proficiency examinations. The biology department at the University, however, grants credit on the basis of the Advanced Placement Examinations, but advanced standing is dependent upon performance on the departmental proficiency examinations.

Just as the policies for granting credit vary, so do the criteria. For example, Harvard and Yale universities have similar policies with regard to qualifications for awarding sophomore standing, but their criteria for granting credit differ. Harvard automatically grants credit in most departments on the basis of a score of 3 or more on the

Advanced Placement Examination, which is also one of the criteria at the University of Michigan. Yale and the University of Colorado require a grade of 4 or 5. Dartmouth and Princeton consider the composite of a number of factors, among which are the results of the CEEB Advanced Placement and Achievement tests and the high school record.

Among the reasons for diverse policies are the differences in the course content of the freshman curriculum at the colleges and universities, the attitudes among faculties toward plans which break from the traditional, their viewpoints concerning enrichment and acceleration, and the degree of acceptance of the Advanced Placement Examinations.

Curricular variance at the institutions precludes a standard practice in advanced placement practices. For example, the content of the Advanced Placement Examination in mathematics is calculus. Therefore, the successful student may be placed in the sophomore course in a college which includes calculus as part of its regular freshman program, or in a junior course where calculus is the sophomore mathematics course. Each institution adapts the program to its own curriculum.

Although the first reaction of college faculties is to be cautious toward relaxing curricular requirements, experience with the program seems to help overcome initial reluctance, and the degree of acceptance seems to be related to the number of advanced placement students enrolled. The same may be said for the formulation of policy. Colleges and universities appear hesitant about establishing formal policies until after they have had actual experience with the program.

Some college and university staff members feel that acceleration may act at cross purposes with institutional objectives and result in sacrifice of breadth and depth of study. This opposition to acceleration often contributes to a conservative attitude toward the granting of credit for advanced placement courses. Experience shows, however, that few students finish high school with enough advanced placement courses to accelerate their college careers to any large extent and that, of those who do qualify for as much as a full year's acceleration, many elect to stay in college 4 years. For example, a survey of the plans of 97 students who qualified for a full year's acceleration at Harvard between 1956 and 1958 showed that 34 students intended to remain in college 4 years; of the remaining 63 students, 16 had not formulated their plans, 45 planned to go on to graduate or professional school, and only 2 students expected to enter immediately upon careers after graduation in 3 years.⁵

⁵ Edward T. Wilcox, *A Report to the Faculty on the Program of Advanced Standing*. Cambridge, Mass. Harvard College, April 1, 1959, Table IV, p. 12.

The recognition of the advanced placement courses as college-level work probably is the most important factor contributing to the success of the program. College action with respect to advanced placement and credit hinges upon such recognition. The granting of college credit for creditable performance in the advanced placement courses and examinations actually indicates the acceptance of the courses as of college caliber. The program director at Harvard College makes the following statement about the reasoning which underlies Harvard's policy of granting advanced placement credit without reservation or further validation:

... no professor teaching a middle-group course would think of re-examining the sophomores who come to him from the freshman courses in the college. It is not necessary to get an honor grade in a sophomore course before receiving credit retroactively for a freshman offering; a student does not have to take a second-year English course in order to get credit for the first-year English course, and so on. The policy decisions [at Harvard] with respect to college courses taken in secondary school therefore stem directly from parallel policies with respect to courses taken in the college itself.⁹

Another question arises from the fact that some staff members are reluctant to accept the Advanced Placement Examinations as a measure for the award of credit. Review of the examinations and other data regarding the student are available to the institutions, however. Harvard, which accepts automatically the score earned on the Examinations as a matter of administrative expediency, believes this is sound policy, but notes that its continuation depends upon the procedures and standards for grading the examinations.¹⁰

Some Evaluative Data of the Advanced Placement Program

A study of the 1954 advanced placement group by the Educational Testing Service¹¹ shows that, of those receiving credit at one of the original 12 colleges, 45 percent stood in the upper sixth of their college classes and that their performance was higher in the courses which were preceded by advanced placement courses.

More recent reports from individual institutions also show that advanced placement students have been doing creditably. Harvard, which enrolls a large number of advanced placement students (a third of the 1958 entering freshmen were advanced placement examinees), finds that "Advanced Placement students are doing well in advanced courses—considerably better than undergraduates whose preparation was a Freshman course at Harvard."¹² Evidence of

⁹ Edward T. Wilcox, "Advanced Placement at Harvard," *College Board Review*, No. 41, Spring 1960, p. 18.

¹⁰ *Ibid.*, p. 20.

¹¹ Bayes M. Norton, "College Admission With Advanced Standing: Report of the Committee on Chemistry," *Journal of Chemical Education*, Vol. 33, May 1956, p. 233.

¹² Edward T. Wilcox, *A report to the Faculty on the Program of Advanced Standing*, op. cit., p. 10.

creditable work are the grades earned by the 806 students (1954-58) who took sequent advanced courses¹³ during their first year at Harvard: 29.6 percent earned A; 40.5 percent, B; 24.0 percent, C; 3.8 percent, D; 1.5 percent, E.¹⁴

Compared with the number of all advanced placement candidates, relatively few Harvard students have qualified for sophomore standing: 2 students received sophomore standing in 1955, 13 in 1956, 33 in 1957, 55 in 1958, and 84 in 1959.¹⁵ Of the 48 students who achieved sophomore standing between 1955 and 1957, "72.9% were on the Dean's List, as against 39.2% of the College as a whole."¹⁶

A December 1957 report from Massachusetts Institute of Technology concluded that the academic records of the students who received advanced placement credit had been "good to superior" and that they experienced little difficulty in the advanced courses. The report stated further that all of the advanced placement students, whether or not they received credit, "show, in general, high ability and moderate to high achievement. Approximately 30 percent . . . have established academic records which place them on the Dean's List."¹⁷

The report also includes the following three examples of how the program helped individual students at M.I.T. One was able to take graduate subjects in mathematics in his junior and senior years by early completion of the prerequisite subjects in his field. A sophomore given credit and placement in mathematics and chemistry was using the released time to take more subjects in philosophy and literature than he normally would have. A freshman who received advanced placement in chemistry, physics, and mathematics could plan to complete the requirements for the master's degree in mathematics in 4 years.

A statement headed "Opportunities for Superior Students at Williams College" appeared for the first time in that institution's 1958 catalog, although advanced placement had been used there earlier.¹⁸ A 1959 report notes that the advanced placement students have done well in the advanced courses at Williams and that their good performance has encouraged faculty members to become "more aware than ever before of superior students and of the need of doing some-

¹³ Sequent advanced courses are those which follow directly the college-level work done in secondary school.

¹⁴ Edward T. Wilcox, "Advanced Placement at Harvard," *op. cit.*, p. 20.

¹⁵ *Admission to Harvard College*, A Report by the Special Committee on College Admission Policy. Cambridge, Mass., Harvard University, Feb. 1960, p. 42.

¹⁶ Edward T. Wilcox, *A report to the Faculty on the Program of Advanced Standing*, *op. cit.*, p. 12.

¹⁷ David A. Dudley and Eugene R. Chamberlain, "The College Board Advanced Placement Program—A Progress Report," *California Journal of Secondary Education*, Vol. 33, March 1958, p. 184.

¹⁸ *Ibid.*, p. 185.

thing special for them, in freshman and sophomore years as well as in junior and senior years."¹⁹

The four students who received advanced placement in history at Williams in 1954 graduated with honors—three in history and one in biology. Of the students who took the advanced history course in 1957, none received grades lower than C the first semester and all received B or above the second semester.²⁰

In general, reports from the high schools have been enthusiastic. Newton High School (Massachusetts) reports about advanced placement students that:

Emotionally they are proving to be more mature than their fellows, better able to accept the challenges to their intelligence and curiosity, less inclined to hunt for excuses for not studying. . . .²¹

Comments quoted from alumni of the Bronx High School attest their enthusiasm and indicate that advanced placement courses were at least as good as first-year college courses, broadened student outlook, and increased appreciation for learning.²²

Problems Encountered in Advanced Placement Programs

Although in essence the procedure of advanced placement seems simple, problems arise because of diverse standards coupled with rather uniform methods of measuring credit.

Among the problems caused by the diversity of educational standards and pointed out at the Advanced Placement Administrators' Conferences is the transfer of advanced placement credit from one college to another. Review of the Advanced Placement Examinations is the policy of many colleges which give initial recognition for this work, but the examination of the transfer student may not be available for this purpose. Thus, there arises the question of whether the second institution will accept advanced placement credit by transfer on the same basis as it accepts other credit or whether it will follow the policies it uses in evaluating its own advanced placement students.

The specific course requirements for admission to some graduate and professional schools and ROTC units may also cause problems as the number of undergraduate schools participating in the Advanced

¹⁹ Charles R. Keller, *Superior Students at Williams College, May 1951*. (Mimeographed.)

²⁰ ———, *Advanced Placement Examinations in History*. Talk given at the Fourth Yale Conference on the Teaching of the Social Studies sponsored by the Yale University Master of Arts in Teaching Program, New Haven, Conn., April 4, 1959. (Mimeographed.)

²¹ Harold B. Gores and Leo Barry, "College-Level Courses in Secondary School," Reprint of *College Board Review*, No. 28, Winter 1956, p. 3.

²² Alexander Breinan, "The School and College Program of Admission with Advanced Standing," *High Points*, Vol. 38, Dec. 1956, p. 21; also, Edward Frankel, "The Advanced Placement Program in Biology," *The American Biology Teacher*, Vol. 21, Dec. 1959, p. 355.

Placement Program increases. With regard to the ROTC units, Princeton University reports that advanced placement credit in mathematics and physics meets the specific requirements of its various ROTC units.²³

The program director at Harvard points out three problems which may be intensified for advanced placement students: (1) Some students who skip the freshman year may not have backgrounds in certain subjects which normally begin in college (e.g., philosophy, social relations, economics) and may restrict their fields of concentration to those subjects of precollege familiarity; (2) acceleration may unduly affect initial choice of majors or may make changes in fields of concentration difficult; and (3) departmental reluctance to credit advanced placement courses toward the field of concentration may result in overconcentration.²⁴

In the high schools, advanced placement problems stem principally from factors related to school finances. Participation in the program has been confined for the most part to independent schools and to relatively large urban schools. It has been difficult to attract rural and small schools into the program because of the cost of providing additional instructional staff and facilities. Even those high schools which otherwise have the facilities to offer the courses sometimes have the problem of a teacher ratio which is not flexible enough to permit scheduling classes for advanced placement students.

Although the Advanced Placement Program has progressed rapidly, its impact in terms of numbers is still relatively small. Its greatest contribution is qualitative, and it is for this reason that it should be commended and encouraged as a means of allowing superior students to progress according to their capacities. If the program continues to grow at its present rate, its influence on teaching-learning techniques could extend to the total student enrollment in the high schools. At the same time, a substantial number of advanced placement students in the colleges could raise the quality of many courses, or could result in an expansion of independent study or honors programs.

There is one danger that some colleges and universities may encounter, however. The growth of advanced placement could cause changes in admissions policies to the extent that competition would eliminate talented students who did not have access to advanced placement courses. Institutions which face this problem may need to adjust their admissions policies accordingly.

²³ "Advanced Placement and Standing, 1959-1960," *Official Register of Princeton University*, Vol. 50 Supplement, May 15, 1959, p. 1.

²⁴ Edward T. Wilcox, *A Report to the Faculty on the Program of Advanced Standing*, op. cit., p. 14-15.

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Other Programs of Advanced Standing

The Advanced Placement Program is only one of several procedures which the colleges employ to enrich the programs of superior students through advanced standing. The organization, national character, and publicity of the program administered by the College Entrance Examination Board make it by far the best known. Nevertheless, some colleges and universities have developed their own independent programs of advanced standing in order to meet the needs of their particular communities. Many of the institutions which have developed such programs also participate in the CEEB program.

Somewhat like the CEEB Advanced Placement Program is the Statewide Cooperative Program for Superior Students in Connecticut. This has been administered by the University of Connecticut since 1955-56. In this program, qualified teachers in certain approved high schools supplement the regular high school work of eligible students with material regularly included in the freshman courses of the University. Students who satisfactorily complete the courses receive full college credit from the University. During the first year, 75 to 80 students from 9 high schools participated.

Unlike the Connecticut program and the typical program sponsored by CEEB, in which the instruction in college-level work is given by the high school staff, other forms of advanced standing have been established in which the colleges have the major responsibility for enriching the programs of high school students. For example, the College Supplemental Program in American History, sponsored by the University of Rochester, extends the Advanced Placement Program to able students in small high schools which cannot feasibly offer the courses. This program supplements high school work in American history through special classes taught by the University staff and directed toward preparation for Advanced Placement Examinations.

Another form of advanced standing is used by colleges and universities which permit superior high school students to take regular freshman courses concurrently with their high school studies. Among those reported are Brooklyn College, Ohio State University, University of Akron, University of California (Berkeley and Los Angeles), the University of Illinois, University of Minnesota, University of Pennsylvania, University of Redlands, and Washburn University of Topeka. A recent survey in California reports that 28 of the State's junior colleges have such programs for gifted high school students.²⁵ The survey revealed further that student performance has ranged from average to superior.

²⁵ "College-High School Liaison for the Talented," *The Newsletter of the Inter-University Committee on the Superior Student*, Vol. 3, Feb. 1960, pp. 25-26.

Brooklyn College began its auditing program in February 1958. Under the program, qualified high school seniors may take freshman courses either for credit or as auditors. By June of 1959, 54 students from 6 high schools had participated, 42 completing the courses with credit and 12 as auditors.²⁶

Ohio State University admitted four students from the University High School to mathematics courses in 1957-58. During the summer, the program was expanded and 11 students from nine high schools enrolled in 10 courses distributed among eight different departments. Although the program has been successful, it is expected to be replaced by advanced placement courses in the local high schools. During its first 2 years of operation, the program admitted 58 students who took 103 courses with a grade-point average of 3.41 (A=4; B=3).

In the fall of 1955, the University of California, Los Angeles, permitted 40 superior students from two nearby high schools to take university courses.²⁷ These 40 students completed 73 courses totalling 223 units with a grade-point average of 3.3 (A=4; B=3). No grade was lower than C and 188 units were B and above. During the spring semester, 39 students participated. These students took 63 courses totalling 184 units and earned a 3.48 grade-point average.

Since not all of the students intended to enroll at UCLA, inquiries were made to find out whether the credit would be accepted by other institutions. All but one of the colleges in which the students intended to enroll agreed to accept the credit. The one college planned to validate the credit by a proficiency examination. Because this first year was considered experimental, student fees were deferred by the University.

In 1959-60, participation in the program was extended to all public and private high schools within 8 miles of the UCLA campus. From 11 cooperating schools, 92 students participated in the program. During the fall semester, these students completed courses totalling 510 units and earned a grade-point average of 3.4. Again no grade was below C and 451 units were B and above. Unlike the first year, the University did not defer its fees for these students; however, funds were available for those who indicated financial need.

Reports from UCLA show that the students performed as well, or better, in their continuing high school studies as they did prior to their participation in the program on the college campus. Of the first group, many were National Merit Scholarship finalists and recipients of other scholarships and prizes. A report from the Student Counsel-

²⁶ *Biennial Report of the President of Brooklyn College for the Academic Years 1957-1960*. New York, Brooklyn College, p. 51.

²⁷ Eli Sobel, "UCLA's Special Program for High School Students," *The Newsletter of the Inter-University Committee on the Superior Student*, Vol. 2, Nov. 1959, pp. 14-17.

ing Center of the University²⁸ quotes student comments indicating that the program provided an effective bridge between high school and college life, broadened student interests, stimulated learning, and improved learning habits. The Center report indicated further that the students felt a personal gain by having available such campus resources as the library, lectures, and plays.

Among the institutions reported to admit superior high school students to summer session courses are the University of Arizona, the University of Louisville, Vanderbilt, Purdue, the University of Missouri, Northwestern at Evanston, and Stetson University.

Supported by a grant from the Carnegie Foundation, the University of Louisville initiated an experimental program in 1958 to admit high school students to the college for summer study.²⁹ Forty students were selected for participation from public and parochial high schools in the area and were awarded scholarships to attend the two 5-week summer sessions. Each student took one 3- or 4-hour course. The 39 students completed 78 courses, received A in 25, B in 39, and C in 14.

In general, the extension of university facilities to high school students is particularly helpful in those instances where superior students attend secondary schools which do not have the facilities to offer college-level work. There are also other advantages in programs given under college or university auspices. The opportunity to study in the actual college environment, besides providing challenging experience, helps make adjustment to the first full year easier. The high schools can initiate and conduct the programs with relative ease and little expense, although there is the problem of scheduling classes to permit time for commuting between high school and college. The colleges do not have to use supplemental measures of student achievement to determine whether the courses are of college caliber, inasmuch as the courses are part of the regular curriculum. The chief disadvantage is to the high schools which miss the stimulating experience of offering college-level work.

Summary

Colleges and universities which offer advanced standing, either through cooperation with the Advanced Placement Program or through the operation of their own programs, recommend it as one means of permitting able students to progress at rates of which they

²⁸ Memo from UCLA Student Counseling Center, May 1959, (Duplicated.)

²⁹ J. J. Oppenheimer, "Experiment at Louisville," *The Newsletter of the Inter-University Committee on the Superior Student*, Vol. 1, Oct. 1958, pp. 7-8.

are capable. They report that advanced standing programs stimulate and motivate superior students to supplement or replace what could otherwise be for them a tedious or uninspiring program of study. Other advantages of the pattern of advanced standing are:

1. Communication between schools and colleges is facilitated through the meetings between high school and college teachers. Their mutual concern over reducing the amount of duplication in the academic programs of superior students is a major contribution toward better articulation between the high schools and colleges and better curriculum planning at both levels.
2. The nature of advanced standing requires that student programs be planned individually, to conform to particular abilities, needs, and interests. This individual planning may result in improved teaching and learning methods for all students.
3. Advanced standing enables students to extend their collegiate studies to areas for which they might not otherwise have time.
4. Acceleration by means of advanced standing programs assists students financially by permitting them to reduce the time needed to complete work for the degree. The financial saving may help some students to pursue graduate study which they might otherwise have been unable to afford.

Currently, the College Entrance Examination Board has assigned a research associate to study its Advanced Placement Program. The present plans include a survey of a representative group of institutions to determine the reasons for participating or not participating in the program, a summary of the accomplishments of the participating high schools, an analysis of the curriculums and examinations based on the opinions of scholars in the respective fields, and a statistical analysis of the scores.

A comparative study of the various advanced standing programs would be impracticable until more data are available. At the present time, there are insufficient data to show the extent to which the various programs complement, supplement, or overlap each other.

Although advanced standing in general has arrived at the point where it can be recommended with reasonable assurance, there is a noticeable lack of evaluative data. The reports from the few institutions which have published data about the progress of students who earned advanced standing indicate a confidence in the philosophy behind advanced standing practices and a conviction that the programs are highly successful in achieving their goal to enhance the education of superior students. However, there is need for objective data from a greater number of participating institutions. Such reports not only would help in developing educational patterns to accommodate the superior student but might conceivably contribute to improved teaching-learning techniques and new curriculum theories applicable to all students.

Among questions still to be answered are the following:

1. What are the reasons or philosophies which underlie the various policies and procedures for granting advanced standing in the institutions?
2. What evaluative procedures should be used to measure the effectiveness of advanced standing?
3. What is the effect of advanced standing on the social adjustment of the participating high school and college students?
4. What is its effect on the total academic program in the college or university, including admissions, curriculum outlines, and graduation requirements?
5. How do advanced standing practices affect the total teaching-learning climate in the high schools and colleges?

APPENDIX

Advanced Standing in Selected Colleges and Universities

THE FOLLOWING DESCRIPTIONS summarizing advanced standing practices in selected institutions are intended to be illustrative only, since a number of other institutions also have programs of advanced standing. For further information, the interested reader should consult the publications listed in the footnotes or write directly to the individual institutions.

*Brooklyn College*¹

In addition to the auditing program which permits able students to take college courses while completing high school, Brooklyn College began to offer credit in February 1958 for college-level courses taught in the high schools. In the beginning, the credit was validated by the course examinations of the College. In 1959, the College discontinued giving validation examinations and now grants advanced placement on the basis of the scores on CEEB Advanced Placement Examinations, supplemented by specific requirements in some departments.

*Cornell University*²

Within the College of Arts and Sciences, freshmen may qualify for advanced placement or credit through creditable performance on the CEEB Advanced Placement Examinations or, in some subjects, on course examinations given by the college departments. Advanced placement is offered in English and foreign languages. Advanced placement and credit for introductory courses may be earned in biology, chemistry, history, Latin, mathematics, and physics.

*Dartmouth College*³

At Dartmouth, qualified students may be eligible for both credit and advanced placement. The award of credit is determined by the departments on the basis of the CEEB Achievement and Advanced Placement tests, the departmental tests administered during Freshman Week, school records, and personal interviews.

Freshmen who receive advanced placement credit for five or more Dartmouth term-courses in three or more subject areas may enter the sophomore class and are credited with a sufficient number of additional unspecified courses to make up the total of nine normally carried in the freshman year. The students must meet the independent reading requirements of the sophomore year and the English, foreign language, and divisional distributive requirements for the degree.

Students who receive credit for four Dartmouth term-courses in two subject areas may receive a full year of advanced standing by fulfilling the following con-

¹ *Biennial Report of the President of Brooklyn College for the Academic Years 1957-59*. New York, Brooklyn College, pp. 51-52.

² *Advanced Placement of Freshmen*. Ithaca, N. Y., College of Arts and Sciences, Cornell University, 1956. (Flier.)

³ *Recognition of Exceptional Preparation*. Hanover, N. H., Dartmouth College, April 1960, pp. 4-6.

ditions before the beginning of the sophomore year: (1) satisfaction of the English and foreign language requirements and all but three of the division distributive requirements for the degree, of which not more than two are in any one division, and (2) credit for two courses in addition to the normal freshman program. Students who meet these requirements before the beginning of the sophomore year receive admission to the junior class and are credited with a sufficient number of additional unspecified courses to make up the total of nine normally carried in the sophomore year.

Qualified students may also receive exemption from the distributive requirements. Although this does not result in credit, advanced placement, or eligibility for advanced standing, it does allow a wider choice of courses by eliminating from the student's program the courses in which he has demonstrated competence.

Harvard University ⁴

For many years, Harvard and Radcliffe students have been able to qualify for advanced placement through departmental examination. Since 1954, students have been able to achieve advanced standing by successful performance on the CEEB Advanced Placement Examinations. A score of 3 or better on the examinations qualifies students for advanced placement in most departments. In French literature and chemistry, the requirement is a score of 4 or better. Calculus is a prerequisite for advanced placement in physics. Although there are no advanced placement examinations in Far Eastern history, Greek, music (harmony), and Russian, students may qualify for advanced standing in these subjects through departmental examinations.

Students who receive formal advanced placement in three or more courses qualify for sophomore standing. Students who receive advanced placement in one or two courses may substitute independent study, but the advanced standing in these cases carries no reduction of the requirements for the degree. If the college work of these students is of honors quality, they may substitute independent study for one or two courses in the form of expanded tutorial graduate work applicable toward a higher degree, private research, or similar activity not covered by undergraduate courses.

Massachusetts Institute of Technology ⁵

Either through the Advanced Placement Program or the M.I.T. examinations for advanced standing M.I.T. students may receive advanced placement and credit in chemistry, English composition and literature, American and European history, and mathematics. Because the advanced placement physics course usually taught in the secondary schools does not parallel either half of the 2-year M.I.T. physics sequence, credit in this subject is infrequently granted. Students who have taken the advanced placement foreign language courses and examinations are encouraged to move ahead to a level commensurate with their abilities.

Ohio State University ⁶

There are three ways in which students may earn advanced standing credit at Ohio State University: the University placement examinations, departmental proficiency examinations, and the CEEB Advanced Placement Examinations.

⁴ *Advanced Standing at Harvard and Radcliffe*, Cambridge, Mass., Harvard University, September 1958. (Filler.)

⁵ *A Guide to Admission with Advanced Placement and Credit at M.I.T.* Cambridge, Mass., Massachusetts Institute of Technology, October 1959.

⁶ *Advanced Placement and Credit*. Columbus 10, Ohio, The Ohio State University, March 1959.

The English, foreign language, and mathematics placement examinations administered to newly admitted students provide well-prepared students with the opportunity for earning college credit. The following excerpt from a report on the placement process in mathematics is illustrative of this procedure:

... Before the start of the Autumn Quarter of 1958, approximately 5000 students took the mathematics placement test. The summary below indicates each of the five classes into which students were separated and shows the approximate number of students placed in each class.

About 100 students were placed in Class 1. They received ten quarter hours proficiency credit and could enroll either for Math 418 or for Math 440, the courses in analytic geometry and calculus, respectively.

About 400 students were placed in Class 2. Each of these students received five hours proficiency credit if he enrolled in Math 422, Special. The course covers in one quarter the college algebra and trigonometry which normally requires two quarters.

About 1900 students were placed in Class 3. These students may enroll either in Math 416 or in Math 421, the beginning college level courses, each containing some algebra and some trigonometry.

A student tentatively placed in Class 3 by the screening test is next given an examination covering algebra and trigonometry to decide if he is entitled to advanced placement. If he shows that he is outstanding in algebra and trigonometry, he is placed in Class 1. If he seems well prepared, but not outstanding, he is placed in Class 2. Otherwise, he remains in Class 3.¹

A second means through which students may earn credit are the departmental proficiency examinations that are similar to the final course examinations. Performance satisfactory to the department qualifies the student for advanced work and credit in one or more fields. Through this method students may acquire credit equal to three full quarters of college work.

Through creditable performance in the advanced placement courses and the CEEB examinations, students may earn advanced placement and credit in chemistry, English, American and European history, Latin, mathematics, and physics. Students may receive credit in biology but advanced placement depends upon their performance on the departmental proficiency examinations. Conversely, in French, German, and Spanish, students may receive advanced placement for outstanding performance on the CEEB examinations but credit is dependent upon their performance on the departmental proficiency examinations.

*Princeton University*²

Decisions regarding advanced standing are made at Princeton on an individual basis, determined from the student's performance on the CLEB Achievement and Advanced Placement tests and his school record and recommendations. Available to qualified students are the following: (1) advanced placement, (2) credit toward fulfilling the distribution requirements and the proficiency requirement in mathematics or foreign language, (3) credit toward reducing the number of elective courses in the upperclass years, permitting the substitution of graduate work or independent study, (4) advanced standing (sophomore in the first year of residence or junior in the second) if advanced placement is earned in three or more subjects.

¹ W. Wallace Stover, "Math Placement Tests Measure High School Product," *Ohio Schools*, Vol. 37, May 1959, p. 42.

² "Advanced Placement and Standing, 1959-1960," *Official Register of Princeton University*, Vol. 80 Supplement, May 15, 1959, pp. 1-11.

For many years, the University has administered two plans of advanced standing which are available to superior freshmen. In the Three-Year Plan, the student omits the sophomore year and receives the A.B. degree in 3 years upon completion of the regular upperclass program. In the Special Program in the Humanities, the sophomore year consists of junior departmental work in history or in one of the humanities departments, the junior year is devoted to senior departmental work, and the senior year comprises independent study in the humanities and culminates in a senior thesis of substantial scope and depth.

University of Michigan *

The College of Literature, Science, and the Arts grants credit for scores of 3, 4, or 5 on the Advanced Placement Examinations up to a maximum of 10 hours, of which no more than 8 may be in any one examination area. For a score of 2, each case is evaluated individually by the college department concerned.

Where the advanced placement course is parallel to one in the college, course credit applicable toward the University distribution requirements is awarded. For credit in courses not corresponding to any college course, departmental credit is awarded and may be applied toward University distribution requirements at the discretion of the Administrative Board. Placement is dependent upon the performance of the student and on how closely the advanced placement course corresponds to the college course. In general, students are not permitted to take for college credit those courses corresponding to the advanced placement courses they took in high school.

Williams College ¹⁰

At Williams, students who have successfully completed advanced placement courses and examinations receive credit toward graduation and placement in courses not ordinarily available to freshmen. With the permission of the Dean, advanced placement students may also register for more courses than is usually allowed and thus can accelerate their college programs.

Yale University ¹¹

The long-standing practices of advanced standing at Yale have been brought together to harmonize with the objectives of the Advanced Placement Program. The brochure describing Yale's policies notes that able students may enrich their programs

. . . in many ways: immediate enrollment in advanced courses; earlier selection of the area of major study and, consequently, earlier association with those faculty members who will direct the major study; omission of one or more courses during the later years of undergraduate study in order to concentrate on individual research; selection of one or more graduate courses while still an undergraduate; combining Senior Year with the first year of a graduate program . . . ; facilitating a year of study abroad during the undergraduate years; [and] . . . acceleration for the student who obtains Course Credit for at least three full year courses, either prior to entrance or delayed.

* *General Information on the Granting of College Credit and Placement for Students Entering the University of Michigan with Experience in the Advanced Placement Program of the College Entrance Examination Board*, 3d Edn. (Mimeographed.)

¹⁰ *Williams College Bulletin*. Williamstown, Mass., Williams College, April 1959, pp. 24-25.

¹¹ *Advanced Placement and Credit for Entering Freshman*. New Haven, Conn., Yale University, September 1959.

A student automatically qualifies for credit for a full year course by completion of an advanced placement course or its equivalent and earning a grade of 4 or 5 on the Advanced Placement Examination. Credit in three full year courses provides the student with the opportunity to graduate in 3 instead of 4 years. Students who receive three or more course credits are classified as freshmen the first year and may enter the junior class the following year.

On the basis of their school record and the results of the CEEB Achievement or Advanced Placement tests, students are awarded exemption from related distributional requirements which must be satisfied by all degree candidates. The award of distributional credit qualifies the student for advanced placement in a particular area of study or enables him to move into other areas. The recipient of one or more distributional credits may convert them into a similar number of course credits if he maintains a strong record during the freshman year and applies for the delayed credit at the end of the year.

In the 1958 freshman class of 1,007 students, 719 received 1,332 distributional credits and took 749 advanced courses. Course credit was awarded to 158 students of whom 38 received credit for three or more full year courses. In the 1959 freshman class of 1,032 students, 759 received 1,479 distributional credits and took 1,036 advanced courses. Course credit was awarded to 216 students, of whom 25 received credit for three or more full year courses.

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NEW DIMENSIONS
In Higher Education

Number 9

The Credit System in Colleges and Universities

by
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**U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE**

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Office of Education

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FOREWORD

CONCERN for the highest quality of the educational product, achieved at each individual's best rate and depth, has led educators to reassess the practice of requiring the accumulation by each student of a set number and combination of class-hour credits for graduation, regardless of his entering proficiency. The adequacy of the semester hour as the primary tool for recording and reporting student progress in higher education has been questioned, and some have expressed the belief that inflexibility in class-hour requirements tends to make the accumulation of credits an end in itself and may actually be a deterrent to educational advances.

Along with brief background summaries of the historical development of the credit system, changing student characteristics, and recent reappraisals of class-hour credit, this report presents current modifications of the credit system. Special attention is given to various practices used in granting credit by examination, since this is the credit-system modification to which many institutions seem to have turned first. Practices of a number of representative institutions are outlined in the appendix to illustrate how examination credit is used to provide flexibility for students with exceptional abilities or experience. The report also gives some attention to the relationships between independent study and the credit system and to the comprehensive examination as a means of supplementing the credit system.

In the absence of conclusive research, the report neither evaluates the institutional practices used in illustrations nor recommends specific substitutes for traditional class-hour credits. It is hoped, however, that the material presented will encourage institutions to initiate further study and research on the credit system as a recording and reporting tool, to analyze its possible effects upon the quality of higher education, and to plan cooperatively whatever improvements their study and research indicate are needed.

The original manuscript was read by a number of educators, representing both higher education institutions and associations; and the comments and criticisms of these individuals have been considered in preparing the final draft.

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THE CREDIT SYSTEM IN COLLEGES AND UNIVERSITIES

Introduction

THE RAPID INCREASE in enrollement and the growing shortage of qualified teachers may be prompting changes which will mark a new era of advances in higher education. Of primary importance in charting these changes is the careful reappraisal of the system used to measure and communicate information about the progress of individuals in reaching their own educational goals and those of the society in which they live.

The credit hour as a measuring and communicating instrument was introduced originally because it was an easy method to use and to record. For students who entered institutions of higher education with similar academic backgrounds, it served primarily as a measure of the quantity of educational work taken. It is a measure of quality only when used in combination with systems of weights, like grades. The major stumbling block in revising the *quantitative* element of the credit system is the need for interchangeable measures of accomplishment by the many institutions of higher education. This problem has been magnified by the fact that students now come from highly diverse backgrounds and that institutions have widely varying standards both for admission and for graduation. Certainly, current adjustments in the credit system would benefit by cooperative institutional planning and research directed toward mutually determined objectives. Whether dissatisfaction with the quantitative element of the semester hour is strong enough to inspire development and acceptance of other measures of student accomplishment remains to be seen.

In this present period of vital concern with improving student learning and saving faculty time, a reevaluation of the credit-hour system is basic to a reexamination of course structure. It is basic also to a reexamination of teaching methods as these are related to, or affected by, new theories of learning, new measuring instruments, new materials available through modern technology, and changing student characteristics representative of all socioeconomic levels.

In our system of autonomy among institutions of higher education, changes come about slowly, often more as a result of social pressures than as a result of deliberate planning in anticipation of society's needs. The basic question is whether the class-hour credit system, despite its practical values, hampers progressive developments in curriculum and instruction. In the meantime, some may consider current modifications of the traditional credit system as little more than mere tinkering. Transitional modifications, however, may become highly stabilizing elements in the cooperative endeavors of institutions during the period of search for, and transition to, an improved measure of accomplishment, a measure which is interchangeable among the many institutions of higher education and meaningful to those who must estimate the student's ability from his college record.

Background of the Credit System

Almost everyone agrees that the composite of a student's marks in college should represent some evidence of his progress toward the goals of higher education, or at least toward his becoming an educated person. Definitions of an educated person are legion. Some of them specify areas of learning in which an educated person should be competent. Not one of them is based on a certain number of class hours or a certain number of courses or a given number of semesters in attendance at a particular type of institution. The piecemeal and kaleidoscopic measurement of that coveted goal known as a college education has developed as a result of a number of contributing factors, chiefly the ease of measuring blocks of time and the delay in developing other standardized measures of learning.

Through the years, a credit hour has come to mean a unit for expressing quantitatively the time required for satisfactory mastery of a course which includes one hour a week of lecture or class instruction for one semester, or its credit equivalent of laboratory or field work, or other types of instruction. The equivalent time required for laboratory and other work also came to be expressed in terms of clock hours. In practice, the quantitative measure came to be time, rather than content covered or competence developed. Catalog statements indicate that many institutions still deny credit to students who miss more than a specified number of these clock hours, regardless of the proficiency demonstrated.

Publications of some institutions show courses carrying as little as one semester hour of credit, although three credits per semester are typical for most courses. Most degree requirements are for 120 to 128 of these semester hours, combined in a 4-year program. Obviously, even though these credits must fit into a specified pattern of distribution, grades for isolated courses may not provide an adequate picture of the student's overall accomplishments or level of proficiency.

While many colleges require subfreshman or noncredit courses for students who do not meet desired levels of proficiency upon entering, some still do not provide advanced standing for students whose entering competence is high enough to make certain required courses so repetitious that they are a sheer waste of time. In any given institution, then, the credit system must be assessed in terms of its relative slavery to blocks of time versus its adequacy in indicating levels of competence.

A brief look at practices of the early institutions of higher education may help to show how the present credit-hour system gained acceptance. The first dozen colleges soon abandoned the teaching patterns of their English and continental counterparts, and adopted classroom recitation as the prevalent type of teaching-learning method. A tendency to standardize curricula and methods of instruction accompanied the 19th century increase in the number and types of institutions and in the percentage of the population attending college.

Questions concerning the dangers of overstandardization had already been raised at several institutions when, in 1869, Harvard introduced the elective system, which spread through most American colleges, giving students increased opportunities to determine the content of educational patterns.

In 1909, the free-elective curriculum at Harvard was reevaluated and replaced by the concentration-distribution system, in which the students were required to take courses in a given number of fields but were permitted electives within areas. In 1912, the comprehensive examination was added, to stimulate broad learning and provide an overall measure of student achievement. Most other institutions have followed the pattern of required and elective courses, although many still have not added comprehensive examinations.

During the 19th century, when the academic backgrounds of college students represented less diversity than in more recent years, the credit-hour system was considered a useful tool in the introduction of new subjects. It has also been considered useful in

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weighing the equivalence of alternative courses, in the establishment of concentration and distribution requirements to provide curricular balance and flexibility, and in the facilitation of transfer from one institution to another.

The 19th century also brought a shift in educational objectives. Technological, scientific, and industrial developments were among the external forces which encouraged the expansion of higher education programs in a variety of vocational areas. For an increasing number of students, a college education was coming to be valued not only for its prestige but also as a vocational prerequisite. How one got the degree and what courses were included in it were considered less and less important by the students, and educators began to blame the credit system for permitting excesses in the flexibility it was originally designed to provide. One study notes this development as follows:

Systems of scoring or grading were adopted which gave the student some notion of his status in a given course. To provide some kind of uniform measure of the amount of time invested in a given pursuit, the credit hour or unit was widely accepted. Once an education could be so measured, and grades assigned to the units, these became objectives in themselves. One went to college not to be exposed to ideas, not to develop one's abilities and personality, not to get an education, but to work out grades and hours and to get a degree. As the student population increased, these objectives came to accompany mass education.¹

In the name of curriculum diversification, courses were added to such an extent that some critics have accused the institutions of proliferation. The credit-hour system itself, however, remained virtually unchanged, although each institution was free to specify course combinations required for degrees. In the absence of any national or regional control over the courses and curricula of institutions, class-hour credit became the currency for transfer. Thus, through the years, as enrollments increased and individual differences were gaining recognition, institutions were busy with the task of providing instruction and academic bookkeeping for courses accumulated in various combinations, in what has been called cafeteria style, by increasing numbers seeking the status and security promised by a college education. For a number of years, many institutions were so occupied with this mass education that there was scarcely time for reappraising the objectives of higher

¹ Robert H. Bonthius, *et al.*, *The Independent Study Program in the United States*, Columbia University Press, New York, 1957, pp. 11-12. An interesting history of the credit system is Dietrich Gerhard's "The Emergence of the Credit Systems in American Education Considered as a Problem of Social and Intellectual History," *American Association of University Professors Bulletin*, Vol. 41, No. 4, Winter 1955, pp. 647-668.

education, much less for reappraising the system used for reporting student competencies.

Nevertheless, throughout the years, the fragmentation of degree requirements in higher education received sporadic criticism and there were scattered attempts to try new approaches. With the influx of veterans following World War II, institutions began in earnest to take a new look at their curricular requirements in terms of student objectives and to reappraise the class-hour credit system as a tool for recording and reporting progress of students with a broad array of experiences and various levels of achievement and maturity. In recent years, the pressure of increasing enrollment has tended to lessen institutional competition for students and has encouraged the use of examination credit and other forms of flexibility in class-hour requirements as a means of attracting those who are most purposeful. Some teaching methods and curricular structures tested in recent experimental efforts to accommodate individual differences are treated rather fully in other publications of this series; later sections of this report review institutional efforts to provide flexibility in the class-hour credit system.

Changing Student Characteristics and the Credit System

To help understand the growing discontent with group curricular requirements which disregard the individual's background or ability, it is important at this point to see how the motives and objectives of today's college students differ from those of the student bodies at the time the credit-hour system was developed. The following findings from research on this subject by the commission on the college student have been summarized from a 1958 publication of the American Council on Education.²

Compared to their predecessors, the college student population today reflects wider diversification of ability and achievement. This has resulted from graduation of increasing numbers of students of varying ability from high schools with diverse requirements and curricula. The proportion of undergraduates over 21 years of age is steadily rising and there is an increasing tendency for college students to be married. Although they have more money to spend, more of them come from "working class" families or from the lower socioeconomic level. They are more representative of all racial and religious groups, and are more likely to earn part or most of their

² W. Max Wise, *They Come for the Best of Reasons*, American Council on Education, Washington, 1958, 66 pp.

expenses. Major fields of concentration have shifted and a larger proportion of students go on to graduate school.

The ACE publication reported also that a considerable number of able students leave college before graduation because they are required to earn class credit in courses which are simply a review of material they have already covered elsewhere. Meanwhile, as enrollments have increased, course grades and the college degree have become such a mark of status in the job market that some students have sought to reduce the problem to a series of steps which may be taken in progression, restricting themselves to areas in which there are practical possibilities of success in amassing credits and marks which may do more to aid them in entering a vocation than in progressing in it.

Although many colleges and universities may be aware of and concerned about these changes in student characteristics, the tendency of most institutions has been to offer program diversification by adding courses as these are judged to be needed, retaining basic course requirements, and measuring progress by the accumulation of class-credit hours, with adjustments for laboratory and other activities.

Yet it must be admitted that, with increasingly adequate libraries, films, closed circuit television, and other devices, the amount of time spent in class is not in any sense an adequate measure of student achievement, even though some initial differences may be minimized by homogeneous grouping. Perhaps, with financial backing from foundations to cover the costs of research, a growing number of institutions will take a new look at the credit-hour system as a tool for recording and reporting student accomplishment. The following recent statements by educators show a need for action but do little to suggest the direction this action should take.

Reappraising the Credit System

A 1959 report, based on the results of a number of research projects sponsored and financed by the Fund for the Advancement of Education, states that:

One great difficulty with the traditional patterns of education is that they are presented to students in fairly rigid "units" which may be administratively convenient but which are educationally inefficient and actually hamper the student in making the most effective use of his time and that of his instructors for his learning. In most colleges and universities, we have acted on the assumption that there is not effective learning unless a professor offers a course "packaged" in quarter or semester units of a given number of hours a week and the student is exposed to direct instruction in

the required number of hours. Content must be padded or trimmed down to fit neatly into the credit unit prescribed for a course and, generally speaking, innovations which would disturb the complex schedule of classes are discouraged.³

Of the experiments supported by grants from the Fund, under the program of better utilization of college teaching resources, the Evaluation Committee was inclined to question whether the experiments were as bold as the staff crisis would seem to demand. It was their opinion that:

Instead of trying to find out how students can be put through the same paces more efficiently, college staffs probably ought to be questioning vigorously their whole course and credit structure. No one knows the amount of wasted effort represented by giving students experiences they don't need or ones from which they cannot individually profit. Wiser selection at this point may offer the greatest possibility for saving faculty time, but few staffs seem to have the necessary courage and stamina to do anything about it.⁴

In the previously cited report of the Commission on the College Student, the problem is stated succinctly as follows:

If the degree is to indicate a level of accomplishment and to be in part a reward for excellence, the college must either seek a new basis for its award or make important distinctions among the degrees to be earned by 4 years of study. In addition, the social factors which formerly encouraged colleges to maintain a set span of time that would allow students to mature are much less cogent in a period and society in which students enter college at widely varying levels of maturity and in which maturity is promoted by so many institutions other than the college. To equate education and time is to denigrate the value of both, particularly the former; it is to declare that the educated man is one who has spent 4 years or 8 semesters at an institution of higher learning, which is an indefensible thesis. Not that many, indeed any, would defend it: but it is the *reductio ad absurdum* of the proposition that the 4-year baccalaureate program is sacred.⁵

The president of the University of Pennsylvania indicated substantial agreement in his 1959 report, *Assaying a University*, when he stated that a survey at his institution suggested that

... the academic bookkeeping of semester credits and examinations for the establishment of student standing should be revised or even abolished, thereby destroying the fiction that education and learning are identical with grades and credit."

³ *Better Utilization of College Teaching Resources*, A Summary Report. The Fund for the Advancement of Education, New York 22, 1959, p. 12.

⁴ *Ibid.*, p. 56.

⁵ W. Max Wise, *op. cit.*, p. 45. That this dissatisfaction with class attendance as a basis of measurement in education is nothing new is indicated also by Norman Foerster, *The American State University, Its Relation to Democracy*, University of North Carolina Press, Chapel Hill, N. C., 1937, p. 97; and A. L. Lowell, *At War With Academic Traditions in America*, Harvard University Press, Cambridge, Mass., 1934, p. 275, where a 1917 address by Dr. Lowell condemns the kind of units used to measure education.

⁶ University of Pennsylvania, *Assaying a University, Report of the President, 1959*, University of Pennsylvania Bulletin, Volume LX, Number 3, October 1959, p. 13.

At the annual National Conference on Higher Education in 1956, Harold Taylor, former president of Sarah Lawrence College, pointed out that, even if we faced no teacher shortage during the current period of increasing enrollment, "we would have exactly the same need for scrapping our present system of instruction and inventing a new one. . . . What we have now is a huge mechanical system for disseminating information."⁷

At the National Conference the following year, John G. Darley censured our reliance on classroom boundaries and traditional credit requirements. He suggested that the pressure of additional enrollment might result in a reorganization of the curriculum, improved use of new technology for instruction and evaluation, and new insights into the power of man for self-education and self-direction.⁸

More recently, at a regional workshop on higher education, Alvin C. Eurich denounced the standard or generally accepted definition of a college education in terms of an accumulation of approximately 120 semester hours of credit in 4 years of attendance at an "accredited" college. Eurich pointed out that, although students are generally admitted to graduate school on the basis of degrees completed at "accredited" institutions,

. . . we often find graduate students at a university who are unable to pass the examinations required of freshmen for entrance to that same institution. Is there not a need, therefore, to reconsider the real meaning of this academic bookkeeping and to inquire about the relationship of 120 semester hours to an education?⁹

Eurich's recommendation for a solution to this dilemma reads:

In the first place, perhaps colleges and universities could cooperatively establish some minimum standards for graduation, based on actual student achievement rather than on accumulation of credits. If admission examinations are important at entrance, is it not equally pressing that colleges be more exact in determining the student's standing upon leaving? How this would be done is a matter for deliberation and study. Various types of comprehensive examinations might be used, including the oral. Outside examiners might be called in as they have been at some institutions. Papers might be written with clearly defined criteria for evaluation.

⁷ Harold Taylor, "The World of the American Student," *Current Issues in Higher Education*, National Education Association, Washington, 1956, p. 22.

⁸ John G. Darley, "What Modifications of the Present Structure Within Institutions of Higher Education Will Be Necessary or Desirable?" *Current Issues in Higher Education*, National Education Association, Washington, 1957, pp. 151-155.

⁹ Alvin C. Eurich, "Silliboleths in Higher Education," *Quality and Opportunity in Higher Education*, Western Interstate Commission for Higher Education, Boulder, Colo., 1959, p. 12.

I am in no sense advocating national examinations. Nor am I minimizing the importance of diversity, either in institutions or in the accomplishments of individuals. The procedures can be adapted to both. All that I can suggest is that we be more precise in defining what we expect students with different capacities and goals to accomplish, and that we cooperatively develop procedures for determining whether or not they have done so.¹⁰

Accrediting agencies, too, have given consideration to the need for reform in course and credit structure. Representatives at an invitational conference sponsored by the National Commission on Accrediting during the summer of 1959 recommended greater consideration of the results of judicious student testing as one means of assessing teaching effectiveness and outcomes of programs of instruction. This group suggested that accrediting agencies should sponsor collection of comparative data by a single national agency, such as the Office of Statistical Information and Research of the American Council on Education. They noted that, if scores for the widely used tests were converted to a common scale, accrediting teams could arrive at better judgments concerning the level of student performance, and institutions would be provided with data on which to base their self-evaluations.¹¹

In an October 1959 conference of representatives of accrediting agencies, it was agreed that the National Commission on Accrediting should assume leadership in pressing for appropriate definitions of levels of educational excellence, in developing better provision for measurements and evaluations of quality, and in encouraging studies leading to more adequate systems of reporting to the public.¹²

In an address to the 1960 annual meeting of the Association of American Colleges, Louis T. Benezet, President of Colorado College, asked, "What sanction, after all, established 120 semester hours? How do we know how many courses a student needs to become educated?" He called attention to John H. Finley's reference to the dean's office as "A marketplace for the exchange of those negotiable elective tokens by which one through skillful barter might come to his degree and yet be a versatile ignoramus."¹³

Benezet describes the failure of college staffs to study reports of experimentation tried by other institutions and to use this information as a basis for planning their own improvements. For

¹⁰ *Ibid.*, pp. 13-14.

¹¹ *Accrediting of Colleges and Universities in the Coming Decade*, Report of Conference Sponsored by the National Commission on Accrediting, June 29-July 1, 1959 (Dewey B. Stuit, ed.), National Commission on Accrediting, Washington 6, 30 pp.

¹² Report of Conference on Accreditation, October 6-7, 1959 (William K. Selden, ed.), National Commission on Accrediting, Washington 6, 16 pp.

¹³ Louis T. Benezet, "One More unto the Breach," address to the annual meeting of the Association of American Colleges, Boston, Mass., January 12, 1960 (mimeographed), 16 pp.

example, he points out that some may have forgotten the Eight-Year Study¹⁴ just before World War II which found that success in college does not depend upon the study of strictly conventional courses in high school and asks whether college course and credit patterns might be equally ineffectual in predicting success after college or in graduate school.

In spite of growing criticisms of the credit-hour system, however, a review of current trends indicates that most institutions have found it easier, for the time being, to adapt their programs *within* the traditional class-hour credit system than to try to blaze new trails in evaluating, recording, and reporting student progress. Whether a complete change in the credit system is inevitable, only time will tell; but there are indications that changes are taking place.

Current Trends in the Credit System

In general, there seem to be three current modes of deviation from class-hour credits: (1) flexibility in class-hour requirements, as in the case of independent study; (2) examinations in lieu of class attendance where students are able to demonstrate the required levels of competence in certain courses; and (3) comprehensive examinations, which require more than accumulated credits in an effort to reduce the effect of isolation of courses and to encourage integration of programs and subject matter. Still another method of deviation from class-hour credits is found in programs individually tailored for students, such as those offered at Sarah Lawrence and a few other institutions.

It should be remembered that the credit system performs a service function in the educational process and that modifications in its use are generated in response to the need for improved communication as educational philosophies and practices change. For that reason, deviations from class-hour emphases have come about piecemeal as trends have developed. For example, in the present educational effort to teach more things better to more people with maximum economy of time and facilities, institutions have been led to adjust their use of credits to emphasize accomplishments and abilities rather than the amount of time spent in classes. It is important, therefore, to consider the influences of current trends on the credit system.

¹⁴ Wilford M. Aikin, *The Story of the Eight-Year Study*, one of 6 volumes in *Adventure in American Education Series on the Eight-Year Study*, Harper Brothers, New York, 1942. 157 pp.; and other volumes.



Other publications in the New Dimensions in Higher Education series have dealt with the growth of programs of independent study and advanced standing.¹⁵ These developments are treated briefly here, with special emphasis upon their relationships to the credit system. The practice of granting credit by examination is treated in somewhat more detail; this, however, is not intended as a tacit recommendation of examination credit as the only or best substitute for the class-hour credit system. Comprehensive examinations, which some institutions have superimposed upon traditional credit systems in an effort to strengthen their total programs, are also treated.

Independent Study Programs

Independent study is not a new concept. Deliberately planned programs were established in American colleges and universities during the latter part of the 19th century. Some required all students to do independent study in certain areas; others permitted superior students to do independent study in honors courses. Experiences with this type of teaching-learning technique were reported in considerable detail in 1957 by Bonthius and others and, since April of 1958, have been reported in *The Superior Student*, which is published monthly by the Inter-University Committee on the Superior Student.¹⁶

The Bonthius report differentiates the development of honors courses and other independent study programs as follows:

When the "honors courses" begin to spread after 1920, it soon became apparent that the term "honors" implied a reward or objective rather than a method of instruction. . . . Princeton University gradually began the use of the term "independent study" for its four-course plan which began in 1923. In 1925 Stanford University used the same term to describe its program. There were several suggestions at the Honors Course Conference at the State University of Iowa, sponsored by the National Research Council in 1925, that the term "honors course" was not an accurate description, and that "independent study" was a better term.¹⁷

Edward B. Stanford, in 1942, further clarified the distinction between independent study programs which are designed for all students and honors programs which limit independent study to

¹⁵ See Winslow R. Hatch and Ann Bennett, *Independent Study*, New Dimensions in Higher Education, Number 1; and Shirley A. Radcliffe, *Advanced Standing*, Number 8 of the series. Independent study is treated also in descriptions of experimental programs in other parts of the series.

¹⁶ Bonthius et al., *op. cit.*, 259 pp.; *The Superior Student*, J. W. Cohen, ed., published monthly during the academic year by the University Honors Information Service of the Inter-University Committee on the Superior Student, University of Colorado, Boulder, Colo.

¹⁷ Bonthius et al., *op. cit.*, p. 6.

superior students, but specific provisions listed in the 1960-61 "Honors Inventory" of *The Superior Student* indicate that there is still confusion in the use of terminology.¹⁸ Stanford defined independent study as an educational program in which the emphasis of college work would be shifted from the mere massing of points, credits, and hours of class attendance to goals defined in terms of individual student growth, achievement, and comprehension in a particular field of knowledge.

The Bonthius report explains that, in organized programs, independent study differs from work in which credit is received for nonsupervised reading because the faculty member keeps in closer touch with the work of the student, serving both as counselor and guide. It differs from tutoring in that the student has more freedom and choice as to the area and nature of his work. In general, however, the term independent study has been used in a broad sense to include all types of programs which do not require the student to conform to the rate, depth, or scope of study of a particular class group.

The earliest deliberately planned programs of independent study were relatively few in number, but reports on their experiences sparked interest in this type of teaching-learning technique. In a discussion of changes in traditional methods of collegiate instruction, John H. McNeely in 1935 described independent study as a "trend toward wider acceptance of the philosophy of individual instruction in higher education, many going so far as to abolish semester credits, required class attendance, and teaching by textbooks."¹⁹ In 1944, the Swathmore program received considerable attention through the publication, *Breaking the Academic Lock-Step*, by Frank Aydelotte,²⁰ who has been called a perceptive pioneer of such programs.

According to the 1957 report by Bonthius and associates, approximately a fourth of the 4-year undergraduate colleges in the United States had institutionwide provision for *some* type of required or voluntary program of independent study. Although there seems to be an increase in required programs in recent years, the study showed that only about 13 percent of the plans were reported as

¹⁸ Edward B. Stanford, "Honors Work and the College Library: A Consideration of the Library Implications of Independent Study Programs," *The Library Quarterly*, XII (April 1942), p. 22. Of the institutions listed in the "Honors Inventory" issue of *The Superior Student*, Jan. 1961, approximately half or more indicated specific provisions for one or more of the following: independent study, senior thesis or research project, advanced placement, comprehensive examinations, requirements waived, credit by examination.

¹⁹ John H. McNeely, "Changes in Traditional Methods of Collegiate Instruction," *School and Society*, XLI (Feb. 16, 1935), pp. 213-217.

²⁰ Frank Aydelotte, *Breaking the Academic Lock-Step*, Harper and Brothers, New York, 1944, 183 pp.

"required" and that most of these were required only of certain groups of students.²¹

The rapid spread of these programs in recent years is indicated by the 1960-61 "Honors Inventory," which is a progress report and not an exhaustive survey. It lists 196 institutions with definite operating programs and 43 with proposed programs. More than half of the operating programs were inaugurated since 1958.²²

Many advocates of independent study support it as a general requirement for all students at some time during their college careers. They see it as a method of teaching and learning which best enables every student to work in accord with his abilities and potential and to be responsible for his own learning and self-direction. In spite of the recent growth of such programs, the proportion of students taking independent study work has remained small, and credit has usually been expressed in terms of the semester or quarter hours considered necessary for an equivalent amount of formal class work. The influence of independent study upon the credit system will no doubt be related to the spread of this type of instruction in all areas rather than to the growth of formal programs of independent study.

In the past, the forced conformity of independent study to formal class-credit patterns, thereby limiting the depth and breadth of independent study areas, may have been a major hindrance not only to the spread of the teaching-learning techniques which independent study is designed to foster but also to the development of other measures of accomplishment appropriate to independent study. With mounting social pressures for better ways to develop the talents of academically able students, with the current increase in enrollments and emphasis upon degrees of accomplishment rather than upon course credits, independent study may well be the catalyst to stimulate general confidence in and development of measures of student progress not based strictly on time spent in class.

Advanced Standing Programs

Advanced standing programs also contribute to flexibility in the credit system. The most widely used of these is the Advanced Placement Program administered by the College Entrance Examination Board, whereby students receive advanced standing in col-

²¹ Bonthius *et al.*, *op. cit.*, p. 211.

²² "Honors Inventory, 1960-61, Programs and Provisions in Four-Year Colleges and Universities," *The Superior Student*, *op. cit.*, Jan. 1961, provides detailed information about current programs and enrollments.

lege on the basis of college level work which they have completed in high school. Also designated as advanced standing programs are the various plans which enable superior high school students to take college courses concurrently with their high school courses.

Advanced standing programs are designed to avoid repetition or duplication in high school and college work and thereby provide for acceleration of able students. More than 400 colleges and universities now accept the principles of the Advanced Placement Program, and the number of higher institutions sponsoring other forms of advanced standing to accommodate local conditions is growing. However, both the Advanced Placement Program and other advanced standing programs are based upon the completion of classroom courses of study, either in high school or in college. Their break with the present credit system, therefore, has been primarily in giving recognition to levels of competence and allowing credit for work completed before admission to college. However, research on these programs²³ may be an important factor in building confidence in acceleration and in the use of examinations as measures for reporting student progress.

Credit by Examination

Except in a few experimental institutions, credit by examination is used chiefly as a modification of, not a substitute for, the class-hour credit system; credits are usually recorded in terms of equivalent course work covered in regular classes. Institutions have found it an easily administered method of permitting able students to accelerate their work and receive credit for demonstrated competence without upsetting the traditional course structure and with a minimum of change in instructional practices.

In its broadest sense, credit by examination recognizes student competence without regard to where, or when, the learning takes place. In some cases, it is a means of granting credit for the student's unsupervised independent study or experiences; in other cases, it is a means of validating credit for course work at other institutions. There are obviously interrelationships between credit by examination and independent study, whether such study is in organized institutional programs or on the student's own initiative.

Over the years, by far the largest number of programs of independent study and credit by examination have given credit which

²³ For example, see Mariam Faries and James Perry, "Academic Acceleration and the College Student," *The Personnel and Guidance Journal*, March 1960, pp. 563-566.

counts toward graduation,²⁴ although some institutions give only exemption credit. The general practice in most institutions has been to give academic credit equivalent to that granted for a particular number of class meetings. Usually this has involved little change in the familiar credit-hour system.

Experiences with veterans following World War II brought about expansion of programs of credit by examination. Before that time, except in a relatively few institutions, examinations not based on class attendance had been used largely to measure proficiency in skill subjects, in languages, and in mathematics. Numerous studies by institutions cooperating with the Commission on Accreditation of Service Experiences of the American Council on Education have indicated that competence on the USAFI Tests of General Educational Development, College Level, could be substituted by veterans for completion of certain required courses.²⁵ Since the so-called veterans' bulge in enrollment, the granting of credit by examination has spread to nonveteran students and the areas of examination credit have been enlarged to include virtually any subject in which an institution finds that a student's competence would clearly permit him to advance beyond the initial course.

One of the most comprehensive studies on the practice of granting credit by examination covers 4-year colleges and universities in the North Central Association and indicates the wide variation in the policies among institutions and, indeed, even among departments within institutions. This questionnaire study by Harding College in 1959²⁶ revealed that 171 of the 300 responding institutions of the North Central region grant college credit by examination. In 105 of these, all departments can or do participate in the program; in 45, the practice is limited to particular areas or departments. In order of frequency, the departments most often mentioned as using credit examinations were languages, mathematics, English, chemistry, biology, music, business and secretarial practice, and speech. Nineteen institutions indicated that the opportu-

²⁴ Robert H. Benthuis, *et al.*, *op. cit.*, pp. 18 ff.

²⁵ For example, Joseph C. Bledsoe, "An Analytical Study of the Academic Performance of a Group of Students Accelerated on the Basis of College Level GED Test Scores," *College and University*, Vol. 29, April 1954, pp. 430-438, cites 8 studies on this subject. *A Guide to the Evaluation of Educational Experiences in the Armed Services*, American Council on Education, 1785 Massachusetts Avenue, N. W., Washington 6, 1954 Revision, 426 pp., is the standard guide used by institutions and organizations in evaluating experiences of armed service personnel.

²⁶ "An Analysis of Practices of Granting College Course Credit by Examinations in North Central Colleges and Universities," Harding College, Searcy, Ark. (covering letter dated September 25, 1959), mimeographed, 19 pp. Also, James A. Hedrick, "College Credit by Examination," *Journal of Higher Education*, April 1960, The Ohio State University Press, Columbus 10, Ohio, pp. 212-215.

ity to earn examination credit is open to all students; 65 indicated restrictions to those students who have demonstrated unusual achievement or whose training and experience outside the classroom give promise of creditable performance. Some institutions give credit only for knowledge revealed on the College Entrance Examination Board's Advanced Placement tests covering work taken in high school.

The study found that a majority of the institutions permit the student to take the examinations throughout the 4-year program. Some colleges require that the student be in residence for a specified minimum period of time; some limit the time during which credit examinations may be taken to the first 1 or 2 years of college. Safeguards for ensuring a high quality of performance are provided by careful screening of examinees and by the difficulty of the examinations.

Reasons most frequently mentioned for adopting the program of credit by examination include aid to the able, highly motivated student; recognition of skills and educational experiences obtained outside the classroom; recognition of unaccredited educational experiences; and avoidance of repetition in course work. Grades for examination credit were assigned on the same basis as for course work in 91 of the institutions; 60 institutions used other devices in lieu of grades to record credit earned by examination.

In this study of North Central colleges and universities, an analysis of the maximum number of credits which could be earned by examination showed 15 semester hours typical of most institutions. Eight schools reported a formal limit of 30 semester hours. Although 60 institutions placed no limit on examination credit, it was reported that students rarely earned more than 15 hours because of the difficulty of the examinations.

The same study reported that those institutions participating in the CEEB's Advanced Placement Program generally grant credit on the basis of scores on the College Entrance Examination Board's standardized examinations in areas for which these are available, but 96 institutions reporting that some examinations are prepared by course instructors, sometimes subject to approval by special committees to ensure maintenance of adequately high standards. Actual grading of these locally constructed examinations is largely left up to the instructor, although some institutions require additional approval by departmental committees before granting credit.

The study showed the essay examination to be the type most frequently used, but 38 institutions reported the use of combinations of several kinds of tests and some institutions reported that the

type of test varied according to the type of proficiency to be measured. Apparently, there was general agreement that credit examinations, regardless of their form, should be exhaustive and intensive, of greater difficulty than examinations in regular courses.

Reports from this and other studies of the procedures in various colleges and universities granting credit by examination show the following characteristics of a successful policy:

1. Proper recognition and support should be given the program by members of the faculty and administration. At the same time, only those students with a reasonable expectation of doing well on the examinations should be encouraged to take them. Because success in independent study depends greatly upon such intangibles as drive, enthusiasm, and motivation, the role of the counselor and the instructor is very important.
2. Every effort should be made to obtain or construct examinations which will ensure a high quality of performance. There should be continuous evaluation and revision of the tests to guarantee depth and comprehensiveness.
3. The success of a program of credit by examination is dependent to some extent upon the enthusiasm of the faculty, one measure of which is the number participating in the development of a sound program. To ensure a dynamic policy, a standing committee composed of members of the faculty and the administration should review the program periodically.²⁷

In summing up the general influences of examination credit practices, a number of points are worth noting. Whereas institutions formerly handled examination credit on the basis of individual students, many now have formulated definite policies regarding the granting of such credit to any student who is able to demonstrate the required level of proficiency. However, it is difficult to isolate any one particular pattern among the institutions, and there has been no concerted effort to develop common practices for transfer of credits among institutions. Wherever policies are stated, they seem to have been locally developed in accordance with the institution's own philosophy and to meet the institution's own standards for regular classwork.

Although ability to pass credit examinations may be the result of a combination of the student's home environment, independent study, experiences, college level work taken in high school, or even a matter of academic aptitude, the simple practice of granting credit by examination has in most cases had little effect upon the traditional curriculum structure and does not necessarily result in any great change in the type of instruction used for regular classwork. Under the present enrollment pressure, its chief value thus

²⁷ James A. Hedrick, "College Credit by Examination," *op. cit.*, pp. 214-215.

far lies in exemption of students from courses involving knowledge they have previously acquired elsewhere, thereby relieving teachers for other students and possibly forestalling lazy study habits. It also may shorten the time required for completion of the undergraduate degree, thereby permitting earlier enrollment in graduate school or earlier entrance on careers.

On the other hand, the practice of granting official credit by examination does mark a recognition of the fact that some learning can and does take place outside the classroom and that a program of unified courses for all students may therefore not be appropriate. Consequently, examination credit has been useful in providing better integration of the student's learning with his pre- and extra-college experience and in providing flexibility in meeting curricular requirements.

Already, the use of credit by examination marks a change in the direction of increased emphasis upon student accomplishment and declining stress upon class time as a measure of student progress. Research indicates that students earning credit by examination do as well in subsequent courses as those who took the earlier work in the classroom.²⁸ Recent progress in the development of tests to measure student growth in areas other than content, such as creativity, objectiveness, critical thinking, attitudes, and values,²⁹ suggest that there is progress in the whole field of educational evaluation. Actually, since each institution determines its own standards for graduation, the shifting of emphasis from class-hour credit to a system of measures based on student growth and accomplishment would not be wholly inconsistent with the philosophy of some institutions that the atmosphere of 4 years of residence study has a profound influence upon student development.

In the years ahead, it is quite possible that institutional experience with credit by examination may become the basis for forthright action in revolutionizing all of higher education. As measuring instruments and techniques are improved and as new educational media gain wide recognition, experience with credit by examination may affect not only the system by which student progress is recorded and reported but methods of instruction as well.

²⁸ *The Student and His Knowledge*, by William S. Learned and Ben D. Wood, The Carnegie Foundation for the Advancement of Teaching, New York, 1938, 406 pp., is still one of the most significant research reports on examinations and student learning progress. Certainly, along with more recent research, it should be reviewed by those who, more than 20 years later, are concerned with many of the same problems.

²⁹ See, for example, Mervin B. Freedman, *Impact of College*, Number 4 of the series on New Dimensions in Higher Education.

This does not suggest a retreat to the European system which is designed to train an elite and which often lacks relevance for mass education because it offers a highly traditional curriculum to the few who can qualify by examination. What it does mean is that, in our efforts to educate every individual to the highest level of his abilities, examination credit may become a major factor in the development of standards which can be used to communicate the extent of individual progress in programs which start where the student is and try to relate his education to his needs and aspirations and to the demands of society.

The experiences with examinations at the University of Buffalo and those at the University of Chicago have been widely reported. These and other examples given in the appendix indicate some of the variations in stated policies of institutions, ranging all the way from simple substitution of examination credit for required course work in the traditional credit system to the use of examinations as the primary measuring instruments, with intermediate measures of competence used only as advisory reports.

Comprehensive and Similar Examinations

It has been noted that some institutions, recognizing the inadequacy of class credit in individual courses as a measure of overall student achievement, have added comprehensive or field examinations. The term "comprehensive examination" has been used to refer to an examination designed to measure overall proficiency or competence rather than proficiency in a single course. Some institutions use comprehensive or field examinations to assess the level of competence in particular areas of study; others use them to assess the overall level of competence in combinations of areas or in total programs.

In a 1955 study by Paul L. Dressel, Director of Institutional Research, Michigan State University,³⁰ 301 or 65 percent of the 466 liberal arts colleges responding to his inquiry reported the practice of using comprehensive examinations. Of these, 232 reported that comprehensive testing was carried on in all departments, 236 reported the use of written tests, and 196 reported the use of locally constructed tests.

³⁰ Paul L. Dressel, "The Present State of Comprehensive Examinations in Liberal Arts Colleges of the U. S. A.," 1955, as reported in "An Appraisal of Comprehensive Examinations in Liberal Arts Colleges and Universities," a report of the New Ideas Subcommittee of the Committee on Educational Policy, DePauw University, Greencastle, Ind., Feb. 10, 1960 (mimeographed), 6 pp. See also Edward S. Jones, *Comprehensive Examinations in American Colleges*, An Investigation for the Association of American Colleges, The Macmillan Company, New York, 1933, 436 pp., for information about an earlier period.

A 1960 report of a study directed to 101 liberal arts colleges by DePauw University tended to confirm the findings by Dressel and noted that:

Outside examiners have not proved satisfactory in a majority of cases. Locally constructed and locally administered examinations in which departments have a major controlling hand have been successfully administered at some selected schools for over thirty years. Without fail, the schools in this group are the ones that report the most favorable attitude toward the examinations among both faculty and students.³¹

The study warned, however, that unless comprehensive examinations are continuously revised to conform with new learning and changing objectives they may become just another fixture in the evaluation process.

A review of current educational literature indicates that institutions which use comprehensive examinations are generally agreed that they have an important place not only in motivating students to integrate their learning but also in providing a measure of overall proficiency. However, in most cases, students are admitted to these examinations only after completion of a stipulated number of course credits in the areas involved or near the close of the total program. Thus, the influence of these examinations on the credit system has been limited by the fact that, as currently used, they measure the end product rather than the stages of progress. For this reason, they must be supplemented with intermediate measures which can be used as a basis for communication with students and others in need of evaluative information before the student finishes his program. Whether widely acceptable intermediate measures more adequate than course credits will be developed remains to be seen.

Only in a few institutions may comprehensive examinations be taken in lieu of classes in certain areas to meet graduation requirements. In general, these examinations are difficult to interpret outside the administering institution. The lack of commonly accepted measuring standards has been a limiting factor not only in research on the relationships between examination scores and student marks, but also in the use of examination results as a basis for interinstitutional communication.

Closely akin to the idea of comprehensive examinations in undergraduate colleges and universities are the licensing tests required by various professions, the examinations used in 22 states in con-

³¹ DePauw University, "An Appraisal of Comprehensive Examinations in Liberal Arts Colleges and Universities," *op. cit.* (30 *supra*), p. 4.

nection with teacher certification,³² and the Graduate Record and other admissions tests used by graduate schools.

The number of graduate schools requiring examinations for admission is steadily increasing. Some institutions accept creditable performance on graduate admissions examinations in lieu of graduation, a practice similar to the early admission programs used by some undergraduate schools. Most graduate schools use admissions examinations to determine the general competence of students or to screen out those inadequately prepared. These practices in themselves suggest that graduate schools consider admissions examinations superior to the traditional credit-hour systems in measuring undergraduate achievement and communicating information about it even from one level of education to another.

Clearly, the increasing tendency of graduate schools to measure the competence of entering students is related to, and possibly an outgrowth of, the increasing discontent with an evaluation system based on accumulation of separate intermediate measures in the form of credits for class attendance. As long as undergraduate colleges and universities fail to develop ways to measure and report accurately the levels of student accomplishment, other agencies or organizations will impose their own measures of competence at the thresholds of graduate study or career.

Summary

It should be granted that the measurement of education is intrinsically difficult; nothing can make it simple. Through the years, institutions seem to have been so busy with adjusting course offerings to meet the changing needs of generations of students and the shifting conceptions of what constitutes an educated person that they have had little time, or inclination, to revise the system used to measure accomplishment or to develop new recording and reporting tools. Philosophies and practices with regard to class attendance and credits vary not only among institutions but among the departments within institutions and even among the teachers in individual departments. Perhaps no credit system is actually an effective measure of an educated person, but institutions are expected to use the best possible means of recording and communicating the information they have.

³² Eugene E. Slaughter, "Current Use of Examinations for Teacher Certification," paper presented at the 1959 annual meeting of the Council on Cooperation in Teacher Education, Washington, Oct. 22, 1959 (mimeographed), 8 pp. See also *The Newsletter of the Council on Cooperation in Teacher Education*, Volume XIII, Number 3, July 1959, which was devoted to discussion of the pros and cons of proficiency examinations for teachers.

Not only do some educators consider the credit hour an instrument of doubtful validity as a measure of accomplishment of students who come from highly diverse academic backgrounds; they consider its strictly class-hour interpretation an actual impediment to improvements in teaching-learning patterns. For example, the forced conformity of independent study programs to the class-hour credit pattern may actually have the debilitating effect of limiting the depth and breadth of independent study areas, thereby discouraging the spread of the teaching-learning techniques which independent study is designed to foster and obscuring the need for development of measures of progress not based on class time.

On the other hand, credit by examination, as a modification of the traditional class-hour system, provides a form of flexibility for able students by permitting substitution of examination credit for class credit, but it does this without necessitating—or encouraging—major changes in curriculum patterns or teaching methods. Although the practice of granting credit by examination does permit able students to avoid the needless repetition of class work on which they are able to demonstrate competence, examination credit suffers many of the criticisms levelled at the course credit to which it has been made to conform.

Nevertheless, credit by examination does mark a change in the direction of increased emphasis upon student accomplishment and declining stress upon class time as a measure of student progress. As currently used in many institutions, examination credit may be only a temporary measure during a transitional period as educators seek a firm basis on which to build major changes in the credit system.

Comprehensive examinations have been credited with motivating students to integrate their learning across subject areas and with providing a better measure of overall student accomplishment than is available from a composite of student marks in isolated courses. However, as currently used, these examinations must be supplemented by intermediate measures of progress, and there has not yet been enough research and coordinated effort among institutions to develop standards for using them as a basis for general inter-institutional communication.

It must be admitted that many of the abuses inherent in the traditional semester-hour measure of progress are possible in any type of credit system, and that the mere use of credit hours does not necessarily mean rigid conformity to group curricular requirements. On the other hand, a credit system based on comprehensive or field examinations does not, by itself, guarantee programs

geared to individual rates of progress or coordinated to cover related areas of concentration. Even in institutions with the traditional course and credit structure, the good teacher may so combine independent study, lectures, and other teaching-learning techniques that students make the desired progress. The point is that the traditional class-hour credit system permits abuses by poor teachers and vacillating students through piecemeal accumulation of credits and imbalance between course objectives and student progress. Also, exclusive reliance on the class-hour credit system may lead to needless repetition of study already mastered by students with superior training or broad experiences.

Institutions which have had longest experience with credit based primarily on competence rather than on blocks of time recommend the use of some combination of comprehensive or field examinations, advanced standing, and credit by examination to encourage more efficient teaching-learning techniques and develop better learning habits and more purposeful objectives by both students and teachers. This does not mean the abandonment of reports of the quality and quantity of the student's progress toward the completion of his program; what it does mean is that individual courses are treated as stepping-stones in the larger program and not as ends in themselves and that the quantitative elements of student marks indicate levels of competence rather than time spent in class.

Hundreds of colleges have recognized the inadequacy of high school units as a measure of achievement and administer college board examinations as a basis for setting minimum admissions standards in order to maintain their established levels of quality. Yet no group of colleges has taken a similar step to establish minimum achievement standards for graduation. The critics of higher education might question whether this means that colleges in general are more careful about admissions standards than about graduation standards, or whether they are more willing to agree upon objective measurement of learning done elsewhere than on measurement of achievement on their own campuses and as a result of their own practices in dealing with students.

Through the years, the great stumbling block to revision of the credit system as a tool for recording and reporting student accomplishment has been the need for measures which are interchangeable among the many institutions of higher education and meaningful to those who must judge the student's ability on the basis of his college record. The current enrollment pressure of students with varied academic backgrounds and the social pressure

for well educated men and women challenge higher education to improve the system of recording and reporting student progress or to develop a new and better one. If institutions do not cooperatively meet this challenge, other agencies or organizations will expand the use of their own measures of competence at the thresholds of graduate study or careers.

Before there can be enthusiasm for the new meaning which such programs as independent study and credit by examination have brought into the credit system, before there can be interinstitutional cooperation in seeking to improve the credit system, there must be information sufficient to bring about understanding and mutual confidence. The extent to which this information can be cooperatively derived and discussed will have an important bearing on which direction institutional action will take. Since the accrediting agencies, by their very nature, are in a position to inspire and act as focal points for cooperative study by institutions with similar objectives, it would seem that they may have a responsibility for leadership unless institutions find some other organizational structure for their cooperative action. Certainly, in the interests of interinstitutional communication and mutual benefits to be gained, colleges and universities need to find an acceptable organizational structure through which to reach agreement on the development and use of tests, equivalence units, and other elements related to student accomplishment.

A Look Ahead

Institutions which have liberalized their use of the credit hour report that, once there is general recognition that achievement can be measured effectively by something other than class time, the teaching process may be approached with improved methods and the evaluation process with new insights. Certainly, the advances made in various forms of testing in recent years warrant objective consideration of testing as a supplement to the familiar credit system. The trend toward the use of credit by examination is positive evidence of growing confidence in such measures within many institutions.

This bulletin does not review the literature of recent or current research on advances made in adjusting the credit system to meet the needs of the four dimensions of higher education — the students, the program, the staff, and the physical facilities. Indeed, it would be difficult to find among the recent scattered research in this area anything to compare in depth and scope with the Learned and

Wood study, *The Student and his Knowledge*, reported in 1938, or the Eight-Year Study reported only a few years later. Nevertheless, some research has been done and there is need for a great deal more, as institutions and their faculties go about the critical reappraisal and cooperative improvement of the credit system.

In reappraising the credit systems of their own institutions, educators might well ask themselves these questions:

How is the credit system related to the student's attitude toward higher education, the program he selects, the objectives he seeks, the attitudes and habits he develops in the process of attaining the goals he sets for himself in higher education and in life?

How does the credit system affect the types of curricular programs a college offers, the objectives it stresses, the standards it maintains, the kinds of learning experiences it provides?

How does the credit system affect the distribution of staff time, the utilization of teaching talent and modern techniques, the objectives which faculty members establish for their own efforts, and their attitudes toward student objectives?

How does the credit system affect the use and adequacy of physical facilities, the selection of new facilities, the acceptance of improved technology in instructional materials?

Finding the answers to these questions may be an important step, not only toward developing an improved system for recording and communicating information about student progress, but also toward improving the very processes by which students become educated.

Appendix

Examples of Institutional Practices in Granting Credit by Examination

It is not the purpose of this report to evaluate the credit systems of the institutions represented in the illustrations given below. In fact, the information in the examples is confined to that portion of each institution's credit system which seems to be concerned with credit based primarily or entirely on examination rather than on class attendance.

Most of the institutions used to illustrate examination credit practices in this report would not be considered highly experimental in their philosophies. For the most part, their programs have not been described in other numbers of the *New Dimensions* series. On the whole the illustrations were selected to give some indication of the pattern and range of modifications in a strictly class-time credit system.

Brooklyn College.—One of the programs which provides most flexibility for acquiring academic credit for experiences outside the classroom is the special baccalaureate degree program for adults at Brooklyn College. Started in 1954, with funds made available by the Center for the Study of Liberal Education for Adults, this experimental program seeks to equate life experience with academic education and "to enable a select group of adults eventually to achieve the baccalaureate degree on the basis of ability and demonstrated achievement rather than the mere accumulation of college credits."¹ The program may have special implications for revision of the credit system because, although it operates within the framework of the traditional credit system, it utilizes some new methods of determining what students need to accomplish in order to qualify for bachelor's degrees and helps them complete balanced programs by means of college work which fills the gaps in their basic experience.

To make available the means of broadening learning to give a balanced program, each adult student is directed into a program of studies which may include special tutorial services, independent

¹ *Brooklyn College Bulletin*, 1960-62, Volume XXX, No. 1, Brooklyn, N. Y., April 15, 1960, p. 49.

study, exemption examinations, classroom or seminar attendance, and a formal thesis or comprehensive examinations. The student's progress is evaluated and translated into equivalent college credits.

According to a news release from the office of the associate director,² adults with a liberal background of life experience may complete the equivalent of all the prescribed general education courses in the form of four tutorial seminars, with exemption available in parts of these seminars on the basis of examinations. Two methods, other than class attendance, are available for meeting the remaining requirements, which are the same for adults as for other undergraduates. One of these is credit for specific elective courses in which examinations reveal that individual adults have mastered both content and objectives through experience. The other is individual tutorial service provided in those cases where adults have not entirely mastered the content and objectives but have learned enough to justify acceleration.

The exemption examinations program, which is open to all undergraduates, not merely to adults, is described in the *Brooklyn College Bulletin* as follows:

The privilege of exemption from any course, except the freshman sequence courses and the physical activities courses, on the basis of independent study and special examinations is available to all qualified fully matriculated students in the College of Liberal Arts and Sciences and in the School of General Studies. Exemption may be granted with or without college credit, depending upon the student's rating in the examination. Students will be allowed a maximum of 9 credits in prescribed courses. There is no limitation on the number of credits which a student may earn in elective courses....

Exemption from some courses in the Division of Vocational Studies may be granted on the basis of previous experience in the field or on the basis of an examination. If a student, matriculating in a program in which accounting, business mathematics, police science, stenography, or typewriting is required, already possesses the pertinent knowledge and skills, he may apply for exemption from certain required courses in these fields...³

University of Buffalo.—One of the earliest institutions with an organized program to allow degree credit on the basis of examinations was the University of Buffalo, whose anticipatory examina-

² Brooklyn College, "The Plan of the Special Baccalaureate Degree Program for Adults," undated but received from Brooklyn College, May 1960, (mimeographed), 2pp. Reports on experiences with this program, which have previously been published by the Center for the Study of Liberal Education for Adults, 940 E. 58th Street, Chicago 37, Ill., include: Bernard H. Stern, *How Much Does Adult Experience Count*, 1955, 23 pp., and *Adults Grow in Brooklyn*, July 1955, 51 pp. A third monograph on the program is currently scheduled for release by the Center.

³ *Brooklyn College Bulletin*, op. cit., p. 79.

tions date from 1932.⁴ Credit parallels that in regular courses. By 1956, 1,700 students had taken more than 4,000 credit examinations to accelerate their work. The University reports that, for the able student, such examinations save time, money, and energy, permit him to find his academic and intellectual level, keep him alert, and help him master academic data on his own; for the college, they attract superior students, encourage the faculty to become critical of their course content as they write syllabi for examination candidates; for society at large, they salvage able young people for higher education who might otherwise forego college because they lack the funds to attend for 4 years, and bring superior students into graduate work or economic productivity and leadership sooner.⁵

A recent catalog from the University of Buffalo states the institution's policy on examination credit as follows:

High school and college students of superior ability may reduce the time and expense required to earn a college degree by taking college credit examinations and thus secure college credit for courses studied independently or for high school units beyond the minimum required for admission. Students wishing to take these examinations may obtain explanatory leaflets and application blanks from the Director of Student Counseling Services. . . . The college credit examination is comparable to the regular examination given at the end of a college course. If the student receives a passing grade in the examination and wishes to accept it, college credit will be granted.⁶

University of Chicago.—The University of Chicago has long had a program in which the primary measures of student competence have been in terms other than semester hour credits, although course units are used as subsidiary measures. The University uses placement tests to assess a student's competence when he enters and comprehensive examinations to assess his competence following periods of instruction, with advisory grades in general courses along the way.

Early in the administration of Robert Maynard Hutchins, who became fifth President of the University on July 1, 1929, the present organization of the University was developed and the basic

⁴ Mazie E. Wagner, *Anticipatory Examinations for College Credit: Twenty Years Experience at the University of Buffalo*, The University of Buffalo Studies, Volume 20, Number 3, December 1952, pp. 107-133, summarizes experiences in, and research on, this program. See also Edward S. Jones and Gloria K. Ortner, *College Credit by Examination, An Evaluation of the University of Buffalo Program*, The University of Buffalo Studies, Volume 21, Number 3, January 1954, pp. 127-201.

⁵ W. Leslie Barnette, Jr., "Advanced Credit for the Superior High-School Student, a Brief Report of College Credit Examinations at the University of Buffalo," *The Journal of Higher Education*, 28: 15-20, January 1957.

⁶ *The University of Buffalo Bulletin*, 1958-60, General Catalog, Vol. XLVI, No. 14, Buffalo, N. Y., Nov. 15, 1958, pp. 23-29.

elements of the College, particularly its emphasis on general education, placement tests, examinations administered independently of the instructors, an autonomous faculty, and early admission, were introduced. Through the years, the size of the institution has done more than make the formulation of definite policies necessary; it has made research possible.⁷ The changes which have been made at Chicago in recent years are evidence of continuous refinement of policies.

Placement tests are considered especially important measures in providing flexibility for the entering student; they also serve as a basis for determining what the student needs to study in order to complete a balanced program of general education and concentration. A recent bulletin of the University describes the function of the placement tests as follows:

Placement tests are used to measure the extent of an admitted student's previous preparation for College courses. On the basis of these tests, the comprehensive examinations that he must pass later in order to qualify for the Bachelor's degree are specified. A student is not required to pass comprehensive examinations or to take courses in those fields or parts of fields in which he already has sufficient competence. He is required to pass comprehensive examinations in those subjects required for a particular degree in which his competence at the time he enters the College is below that needed. A program of courses is drawn up to prepare him for these examinations. This use of the placement tests eliminates the repetition of subjects that the student has already mastered and, at the same time, reduces the possibility that he might begin his program with courses for which he would not be adequately prepared.⁸

The Chicago College plan requires the student to show competence in a balanced program consisting of an organized curriculum in general education and concentration in a specific field of study. In the program of general studies, all students are required to have competence in the following eight areas: biological sciences, physical sciences, humanities, social sciences, English composition, foreign language, mathematics, and history of western civilization. This competence may be demonstrated by performance either in placement tests taken when the student enters the College or in examinations taken after instruction in the field. Advanced standing is determined on the basis of student performance on the College's own placement examinations or by scores on the Ad-

⁷ See, for example, *The Chicago College Plan*, by Samuel Boucher (1935, 344 pp.) and the edition revised and enlarged after 10 years' operation of the plan, by A. J. Brumbaugh (1940, 143 pp.). The University of Chicago Press, Chicago; also *The Idea and Practice of General Education: An Account of the College of the University of Chicago by Present and Former Members of the Faculty*, The University of Chicago Press, Chicago, 1950, 333 pp.

⁸ The University of Chicago, *Announcements—Undergraduate Programs, 1959-60*, Volume LIX, Number 1, Oct. 3, 1958, p. 53.

vanced Placement Examinations of the College Entrance Examination Board. For those students not permitted to accelerate as a result of placement tests, the maximum requirement in general studies is 24 quarter course units (2 years). In any of these eight general studies areas, students with superior preparation may be excused from part or all of the course work on the basis of superior placement test performance. It is even possible for a student to demonstrate, by means of placement tests, that he already has the knowledge and competence expected of a student who has completed the full 2-year requirement in general studies.⁹

Just as placement tests are used to assess a student's competence in general studies when he enters the College, so comprehensive examinations are employed to measure the quality of a student's performance in an area of general studies following a period of instruction. These examinations are described by the University as follows:

The teaching staff in each area is responsible for formulating examinations, but when staff members read and evaluate the examination papers, they do so without knowing the identity of the individual students who wrote the papers. Since examinations given at the end of a two-quarter or three-quarter span of instruction are comprehensive of all the work done up to that point, they require students to seek and to understand the organizing principles in a considerable body of material. Consequently, the system of examinations makes possible two distinct educational advantages. Because the examinations cover a lengthy period of instruction, fragmentation in the learning process is minimized. Because the student's official grade is based upon examination papers that are read without knowledge of his identity, these examinations afford an unusually objective evaluation of student performance.¹⁰

Advisory grades, used to report the quantity and quality of a student's preparation in general courses, are A, B, C, D, I, and F. However,

Advisory marks are not entered on a student's permanent record; they are regarded as reports to indicate for the student and his advisor the extent to which the student is successfully preparing for the comprehensive examination by which a final grade will be determined. The evidence on which advisory marks are based is found in the written exercises and tests prescribed and announced for each course early in the quarter.¹¹

Grades used in evaluating a student's performance on a comprehensive examination are A, B, C, D, and F. The policy with regard to these grades is stated as follows:

⁹ The University of Chicago, *College Announcements, 1961-62*, Volume L.XI, Number 1, 1960, pp. 36-38.

¹⁰ *Ibid.*, pp. 38-39.

¹¹ *Ibid.*, p. 168.

Grades reported on comprehensive examinations are entered on the student's permanent record. No grade is reported if a student fails to take an examination for which he is registered, but the absence is permanently recorded unless the student cancels the registration within the specified time limits. Comprehensive examinations may be retaken. Although each grade received on the examination in a particular field is entered on the record, only the highest grade reported is considered to be the official grade.¹²

In general, then, the final measures of the student's achievement in general studies are examinations, which are graded without reference to the student's performance in class discussions. Placement tests, which indicate the level of precollege accomplishment, are used to create a sensitive and flexible system to insure that each student undertakes a program appropriate for his own needs in meeting the standards imposed by the examinations. Advisory marks, or course credits and grades, are used to indicate the quantity and quality of student progress toward competence in examination areas and may be used for transferring credit to other institutions.

Completion of the program of general studies (roughly half of the undergraduate requirements) is based upon successful performance on comprehensive examinations in eight areas of general education. The other half of the student's undergraduate program is divided approximately equally between studies in the specific field of concentration and other work determined by individual needs and interests. Requirements in fields of concentration are established by the specialized staffs of each field.

A student who wishes to pursue a special line of inquiry which does not correspond to any one field of academic specialization may do so through a program of tutorial studies approved by the Council on Advanced General Studies. In working with a high degree of freedom, on a subject largely determined by his own special interests, the student faces a corresponding challenge to his initiative and responsibility. The individualized tutorial portion of the student's program requires a year's work and may be divided between the last 2 years in the College or concentrated in the last year, depending upon the nature of the interest and the stage at which it becomes fully defined. In any case, the major part of the student's time in his last year is devoted to independent work supervised by his tutor. At the conclusion of his studies, a tutorial candidate must submit a satisfactory bachelor's essay and pass a comprehensive examination that is set for him by the Council on Advanced Tutorial Studies.¹³

¹² *Ibid.*, p. 169.

¹³ *Ibid.*, p. 42.

University of Illinois.—Besides cooperating in the national Advanced Placement Program of the College Entrance Examination Board and granting credits for educational experience in the armed services according to the guide published by the American Council on Education, the University of Illinois has a rather extensive program of "proficiency" examinations for credit. These proficiency examinations, which are similar to regular course examinations, are given each semester in courses normally open to freshmen and sophomores. Except in Rhetoric 101 and 102, the student must obtain the consent of the head of the department concerned. In more advanced undergraduate subjects, proficiency examinations are given on recommendation of the head of the department and approval of the dean of the college.

Entering freshmen who are well prepared and who have not already obtained credit by way of the national Advanced Placement Program, are encouraged to take proficiency examinations, especially in courses required for freshmen and sophomores.

The 1960-61 bulletin of the University gives further information as follows:

No fee is charged for these examinations. A student who passes a proficiency examination is given credit toward graduation, provided that this does not duplicate credit counted for his admission to the University and that the course is acceptable in his curriculum. The grade in the proficiency examination is "pass" or "not pass," but no student is given a grade of "pass" unless he has made at least "C" in the examination. No official record is made of failures in these examinations, and grades received on proficiency examinations are not considered in computing averages.

Proficiency examinations are given under the following restrictions: (1) They may be taken only by persons who are in residence or are registered in a correspondence course, or who are candidates for degrees and need no more than ten semester hours to complete the requirements for their degrees; (2) They may not be taken by students who have received credit for more than one semester of work in the subject in advance of the course in which the examination is requested; (3) They may not be taken to raise grades or to remove failures in courses.¹⁴

University of Louisville.—As early as June 1933, the University of Louisville bulletin outlined the institution's policy regarding achievement as the primary measure of student progress and noted that the faculty was "working to minimize the defects of the course-credit-examinations system." The 1959-60 bulletin lists four types of Extramural Study by which the able student may receive credit for work which he carries on independently. Under this plan, "emphasis is put on the *actual achievement* rather than on

¹⁴ *University of Illinois Bulletin*. Volume 57, Number 79. Undergraduate Study. 1960-61, Urbana, Ill., July 1960, p. 37.

time served."¹⁵ Credit earned by conference work, by extramural examination, or through independent study during the regular session is counted in the student's regular load, which must not exceed 17 hours. Other regulations governing credit for extramural study are given as follows:

Conference Work: An instructor may excuse a superior student from regular class attendance. The student must be regularly enrolled for the course and must take all of the regularly scheduled examinations and the final examination. The student must pay the same fees. He will receive the same credit as if he attended the class regularly.

Extramural Examination: A student may apply for an extramural examination on any course which is listed in the catalogue. . . . He must make application for the examination through the Dean's Office and have a chairman appointed from the faculty to supervise his examination. He must present himself for both written and oral examinations, and must submit any other evidence of his achievement which the chairman may require. He must pay fees amounting to one-half the regular fees for the course, and he must be registered for other regular credit courses.

The purpose of an extramural examination is to give the student credit for work in a field in which he is already proficient.

Independent Study: Superior students may with permission of the Dean register for independent study in a particular department. The student must have a general average of 2.0, an average of 2.5 in the department, and at least 18 semester hours credit in that department. Independent study work consists of a minor research project conducted under the direction of a faculty member. At the close of the study the student must present himself for oral examination and for written examination if the examining committee so desires. Application blanks for independent study are secured at the office of the head of the department.

Intersession Credit: In order to assist special students, intersession credit is given for work taken between the end of the Summer Session and the beginning of the Fall Semester. A student may pursue any regular course under the tutelage of the faculty member who regularly teaches that course. He may earn no more credit than there are weeks between the end of the Summer Session and the beginning of his next enrollment in the University, whether it is in the College or in one of the other schools. He must pay for his work at the regular rate for part-time, residence credit. He must present himself for examinations, both oral and written, at the close of the course, and must complete the course entirely by the end of the first week of the next session for which he may be enrolled in the University.¹⁶

University of Minnesota.—The University of Minnesota distinguishes between examinations for credit and examinations to demonstrate proficiency in prerequisite courses as follows:

¹⁵ *Bulletin of the University of Louisville, College of Arts and Sciences*, 1959-60, Vol. LIII, No. 1, July 1959, Louisville, Ky., p. 41.

¹⁶ *Ibid.*, p. 41.

Examination for Credit: Credit for material mastered outside of class (exclusive of high school work) may be obtained by special examination. A student who believes that he is as well informed in a particular subject as the students successfully completing the course should apply to the Scholastic Committee for a special examination. If the application is approved, the committee will appoint a special faculty committee to administer the examination. The fee for such examination is \$5. Usually no grade is assigned.

Examinations to Demonstrate Proficiency in Prerequisite Courses: If a student wishes to carry a course for which he does not have the prerequisite he may apply to the Scholastic Committee for permission to take an examination to demonstrate his proficiency in the prerequisite. A satisfactory showing in the examination will admit the student to the course but will not entitle him to credit in the prerequisite course. There is no fee for this examination.¹⁷

University of New Mexico.—The bulletin of the University of New Mexico states concisely the institution's policies with regard to examination credit by Advanced Placement Examinations and other tests and to validation of USAFI courses.

A resident student has the privilege of receiving undergraduate credit from passing a special examination without attendance upon the course, subject to the following restrictions: (1) he must not have been previously registered in the course; (2) he must have a scholarship index of 2.0 or more in a normal program of studies and be doing superior work at the time of taking the examination; (3) the examination must have the approval of the dean or director of the college, the chairman of the department, and the instructor concerned; (4) the applicant must obtain from the dean or director of his college a permit for the examination and pay in advance the required fee; (5) the student must obtain in the examination a grade not lower than C and show a mastery of the course acceptable to an examining committee; and (6) credits earned do not apply to residence requirements.¹⁸

The University participates in the CEEB's Advanced Placement Program and grants credit upon recommendation of the academic departments concerned for Advanced Placement Examinations completed with grades of 3, 4, or 5.¹⁹

At the University of New Mexico, credit for service training and experience is granted in conformity with the procedures recom-

¹⁷ *Bulletin of the University of Minnesota, College of Science, Literature, and the Arts, 1959-61, Vol. LXII, Number 13, July 1, 1959, Minneapolis, Minn., p. 22.*

¹⁸ *The University of New Mexico Bulletin, 68th Catalog Issue, 1959-60, Volume 72, No. 6, Albuquerque, N. M., May 1959, p. 95.*

¹⁹ These are the three highest scores on a 5-point scale; see Shirley Radcliffe, "Advanced Standing," *op. cit.*

mended by the North Central Association and the American Council on Education. Because not all catalogs are explicit in stating what these procedures are, the policies of the University of New Mexico are reported here in considerable detail:

Total semester hours of military credit to be accepted in a specific degree program will be at the discretion of the degree-granting college of this University in which the student is registered. A maximum of 8 semester hours elective credit is allowed for basic or recruit training apportioned as follows: First Aid, 2 semester hours; Hygiene, 2 semester hours; Physical Education Activity, 4 semester hours. . . . Credit earned in specialized army and navy programs conducted by college and university staffs is allowed in accordance with the recommendations of the administering institution. Credit for work done in formal training programs is allowed in accordance with the recommendations of the American Council on Education or on the basis of examinations here. U. S. Armed Forces Institute courses are acceptable if courses have been taken through university extension divisions accredited by the National University Extension Association. Other USAFI courses may be accepted if recommended by the American Council on Education and validated by successful scores on "End-of-Course Tests." U.S. Armed Forces Institute correspondence courses not directly transferable or validated by "End-of-Course Tests" may be established by examination at this University. The veteran has the opportunity to demonstrate his competence in any University subject, and to establish credit in that subject, by passing an examination as required by the Committee on Entrance and Credits.²⁰

Ohio State University.—At Ohio State University, students may receive credit by examination (Em credit) for superior performance on regular placement tests in English, mathematics, foreign language, health education, and typing and shorthand. They may also receive Em credit for creditable performance on proficiency tests designed to measure exceptionally good preparation in high school or independent study outside of class. The 1960 *College of Arts and Sciences Bulletin* states that:

The department or school in which the course is being taught has full authority for permitting a proficiency test and for establishing the level of performance to be attained. If the student is successful in attaining this established level, the department chairman may recommend Examination (Em) credit for the course covered by the proficiency test. The Executive Committee of the College of Arts and Sciences has ruled that a student may not obtain Em credit for a course which is prerequisite to one in which he has earned college credit.²¹

The bulletin further explains the use of Em in the marking and quality point system:

²⁰ *Ibid.*, p. 59.

²¹ Ohio State University, *College of Arts and Sciences Bulletin*, Vol. LXIV, No. 15, Columbus, Ohio, April 1, 1960, p. 8.

Section 1. This mark indicates credit given to students registered in the University on the basis of examinations taken prior to or after admission to the University. The level of achievement which must be demonstrated by the student on these examinations in order to receive Em credit shall be determined by the Department or School in which the course for which credit is being given is taught. This credit, up to a maximum of thirty quarter hours, shall be assigned only upon the authorization of the Chairman of such Department or the Director of such School and with the approval of the Executive Committee of the College in which the student is registered. An additional fifteen examination quarter credit hours may be assigned in the same manner but only with the approval of the Faculty Council.

Section 2. Examination credit shall not be given to a student for a course in which he has received a mark at this University. No [quality] credit points are allowed for courses in which a mark of Em is given.²²

University of Oklahoma.—Not only does the University of Oklahoma give credit for military experience according to recommendations of the American Council on Education and grant credit by examination for other measured student competence;²³ it also seeks to weed out credit for class work taken so long ago that it may no longer be relevant to the student's program. For example, the University bulletin for 1959-60 notes that:

Effective September 1, 1959, credit in the student's major field or area of concentration which is more than ten years old may not be applied toward a bachelor's degree unless it is validated by the major department, or by the departments in the student's major area of concentration. The term "area of concentration" is included in addition to "major field" to allow for those cases in which the equivalent of a major may be earned by a combination of work in several departments, as in the Letters program.²⁴

Credit for highly specialized or technical work is usually determined in consultation with the chairman of the department concerned.

Sarah Lawrence College.—Sarah Lawrence College is one of these few institutions which have sought to develop quality education while abandoning the traditional program of courses and credit hours. The relatively small enrollment simplifies the problem of getting to know well the individual students and their abilities and needs. The following excerpts from the institution's 1959-60 catalog describe how their program works:

Among the innovations introduced at Sarah Lawrence have been the elimination of required courses in favor of a curriculum planned individually for each student; a system of faculty reports to students in place of the con-

²² *Ibid.*, p. 21.

²³ *Bulletin of the University of Oklahoma*, Catalog Issue, New Series No. 1272, Norman, Okla., June 15, 1959, pp. 24-25.

²⁴ *Ibid.*, p. 23.

ventional grading system; small classes, discussion groups, seminars, and tutorial conferences in place of the lecture system; the inclusion of the creative arts—painting, sculpture, design, theatre, dance, music, writing—as integral parts of the academic curriculum; the combination of practical field work with academic study in politics, economics, psychology, and the social sciences; the establishment of a complete system of student self-government for student affairs; the inclusion of a program of teacher preparation, with practical experience in teaching, as a part of the liberal arts curriculum.²⁵

The system used to provide balanced programs is described thus:

Since there is no system of required courses and since students are not required to have a major in a particular field, it is necessary not only to plan the programs for a single year carefully, but to see that the sequence of studies taken from year to year is an intelligent one. For some students a typical four-year program shows an increasing specialization; for others who may have begun with highly specialized interests the process of education is one of broadening these interests and of finding new, and sometimes more important, ones; for still others a program shows fairly even division of emphasis, perhaps between two fields. There are many appropriate kinds of programs; the important problem is to find out which kind is best for each student and to plan it to insure the maximum growth.²⁶

The following description shows how evaluation and reporting are accomplished:

One of the tasks of any college is to discover a real measure of student achievement. Sarah Lawrence College seeks to evaluate the education of individual students in terms of the standards of the College. . . . Such an evaluation cannot be made in terms of conventional grades, numbers, or letters. An attempt is therefore made to describe the growth and achievement of students, in reports written by faculty and sent to the students twice a year. In these statements faculty members report their judgment of the student's academic achievement; of attitude toward work; of study habits; of ability, not only to learn something but to form judgments and to use what is learned; of ability to work independently—indeed, of all the factors that seem significant to faculty as indication of the student's intellectual and personal maturity.

Final responsibility for decisions affecting a student's continuance in college, classification and qualification for the degree, rests with the Faculty Committee on Student Work. This Committee meets weekly; it regularly reviews work of all students and discusses any questions about any student's work which teachers or dons may wish to bring before it. Its judgments are based on faculty reports, reports by dons, and conferences with dons and teachers.²⁷

²⁵ *Sarah Lawrence College Catalogue*, 1959-60, Bronxville, N. Y., August 1959, pp. 5-6.

²⁶ *Ibid.*, p. 12.

²⁷ *Ibid.*, pp. 14-15.

NEW DIMENSIONS
In Higher Education

Number 10

Flexibility

in the Undergraduate Curriculum

by

CHARLES C. COLE, JR., *Lafayette College*

In cooperation with

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Division of Higher Education, Office
of Education

**U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE**

ANTHONY J. CELEBREZZE, *Secretary*

Office of Education

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FOREWORD

The Series

THE SERIES, "New Dimensions in Higher Education," deals with developments of significance to colleges and universities and all persons interested in improving the quality of higher education. These developments are examined one at a time but in the context of a series. Each number is intended, within the bounds of reasonable brevity, to provide the hurried reader with a summary and interpretation of a substantial body of information. To the extent feasible, detailed studies are cited, needed additional research is identified, and recommendations are suggested. Background materials include institutional reports on file in the Office of Education's Clearinghouse of Studies on Higher Education, published literature in the field, and the counsel of educators who are recognized authorities in the subjects treated. In order that the series may improve its service to colleges and universities, reader reactions are welcome.

This Issue

IN THEIR SEARCH for ways to help each student progress at his best rate and depth, institutions have turned to a variety of practices which lead to curricular flexibility through course programs and teaching techniques. Some of these practices are relatively new; others are as old as good teaching but have been given new emphasis. Faced with enrollment pressures of students with wide variations of academic backgrounds and equally wide differences in career objectives, administrators see in practices which lead to flexibility not only a means of improving student learning but also a means of improving institutional offerings, enhancing faculty growth, facilitating admissions practices, and cutting down on attrition.

The major portion of this publication is devoted to particular practices leading to flexibility as these were observed by the author in 13 specific institutions. To simplify the treatment of various overlapping types of practices, the programs are discussed under three headings: (1) Those practices which provide flexibility by permitting the student to skip or substitute courses on the basis of demonstrated proficiency, and thereby to accelerate his program or take additional work for breadth or enrichment; (2) those which provide flexibility through course patterns, special courses, or special sections for enriching or broadening programs; and (3) those which provide flexibility through varied or improved instructional methods or other teacher-student relationships in the learning process.

The author, dean and professor of history of Lafayette College, is widely known in educational circles and the opinions expressed are entirely his own. Because the report is based on observations, there are few specific references to published materials. The original manuscript was read by a number of educators, including one or more individuals at each of the institutions represented, and their comments and criticisms have been considered in preparing the final draft.

HAROLD A. HASWELL
Director, Programs Branch
Division of Higher
Education

R. ORIN CORNETT
Acting Assistant Commissioner
for Higher Education

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FLEXIBILITY IN THE UNDERGRADUATE CURRICULUM

Introduction

FLEXIBILITY IS USED in this report to refer to those practices or combinations of practices by which each student is permitted to progress in his college program at the rate and depth of which he is capable. This somewhat free interpretation of the word was selected in an effort to simplify the general discussion of a pattern of emerging practices for which no more suitable term has yet become established.

During the first 3 months of 1958, through a travel grant from Carnegie Corporation, the author visited 13 campuses in order to study the operation of and possibilities for flexibility in the undergraduate curriculum. Those visits intensified the author's continuing interest in developments on the campuses concerned, and recent information reported by the institutions is included in the following discussion.

This report describes the cross section of practices observed and is in no way a survey of the degree to which flexibility is practiced across the Nation. The institutions visited were Brandeis University, California Institute of Technology, the University of Chicago, Harvard University, Hiram College, the Massachusetts Institute of Technology, the University of Michigan, Oberlin, Reed, San Francisco State College, Stanford University, University of California (Los Angeles), and Yale. Each institution was selected either because the author was aware of an interest in curricular flexibility or because the school represented a type of institution. The list was not designed to be representative; it was certainly not exhaustive. The examples of flexibility cited are illustrative of what can be done; there are many other excellent programs in other institutions. Because the report is based upon personal observations and discussions with administrators and students at the institutions represented, there are few references to published data.

At the outset, it must be recognized that the quality of flexibility can be good or bad, that flexibility can provide freedom from curricular rigidity but that it also can provide looseness and chaos. To be really effective, flexibility must be planned and purposeful; it

must be deliberately designed to contribute to the continuing momentum in student growth and thereby result in a cumulative effect in education.

There is flexibility in rate of progress and flexibility in depth of learning; each has its place and its purpose, and their relative merits are not argued in this report. What the report does show is that purposeful flexibility is a valuable trend in higher education, and it gives examples of the kinds of flexibility which have been used.

Rationale for Curricular Flexibility

The sound curriculum is the one that takes ability differences into account, that is devised to demand nothing but the best from every student, that puts a high premium on individual differences, and that provides for an ample amount of individual attention to those who can make the most of educational opportunities.

There have been charges in the past that too many colleges were like vast supermarkets, catering to the whims of the public, packaging their courses, marketing their wares, supplying every customer with a standardized product regardless of his interests or abilities. It has been generally agreed that the standard curriculum may be satisfactory for the standard student; but any educator knows that purposeful superior students are not satisfied to be led slowly along the path of learning when they have the intellectual muscles to race ahead.

To combat some of these problems, curricular flexibility as an educational ideal has much to offer. Its existence benefits the institution, the faculty, and the student body. Attention to this new dimension in higher education follows the American ideal of giving every capable student the maximum opportunity for full development of his intellectual resources.

Flexibility and Institutional Progress

The college gains from flexibility in that its operation serves to prevent stagnation. Any course of study, no matter how good, which does not change with changing conditions, eventually becomes obsolete. Any policy or degree requirement which is not subject to at least the possibility of modification eventually becomes a "sacred cow," revered perhaps for reasons less than rational.

What reasons do college staffs give, for instance, for requiring 4 years, or 120 semester units, or something else for the bachelor's degree? What is so magic about 4 years? When only about 40 per cent of all college entrants graduate in 4 years, what is the point in maintaining the fiction that par for the course is that period of time? What does one lack or lose by graduating in $3\frac{1}{2}$ years? Or in 3 or 5 years for that matter?

The answer sometimes is given that one misses a lot, that there is more to a college education than passing a set number of courses, that a certain time must elapse for a student to mature, for the knowledge he has acquired to sink in, that there must be adequate time for meditation. More frequently, however, the answer is simply "tradition," and a far too elaborate extracurricular schedule that, along with the values it brings in terms of lasting friendships and close associations, produces distractions that lead a student to fritter away his energies and slows him down to a common pace. In the past, the weight of tradition has been such that few students have accelerated their programs and few institutions have been interested in encouraging their students to accelerate. Perhaps they should not, but it should be for reasons other than tradition.

It is maintained at Reed College, for example, that the 4-year pattern persists as a result of a curricular arrangement that differs at the underclass level from what is being done in high school and that requires full junior and senior years with senior thesis required of all students. According to one staff member, "The upper-class program is designedly demanding of even the best students, and the appropriate methods of instruction—small group discussion, absence of textbooks, emphasis on individual responsibility in the laboratories, and in written work in other courses—limit acceleration but encourage flexibility." Reed gives "credit for quality" in the first 2 years, as well as permits heavier than normal loads, but these devices almost never result in acceleration.

At institutions such as Yale where the residential features of college are emphasized, there is another reason for the tendency to hold to the 4 years. Although Yale College has allowed graduation to appropriate students in 3 or $3\frac{1}{2}$ years, it is believed that the valuable experience of living in a residential college should not ordinarily be speeded up but that considerable flexibility should be provided within the 4-year program. Yale, Harvard, and other institutions which stress residential features consider that they have intellectual resources to occupy a student for many years. To those who take this view, it is almost unthinkable that anyone should desire to leave the campus before the end of 4 years.

The issue frequently becomes one in which institutional reasons

for holding to the traditional timetable are balanced against individual exceptions in the form of unusually able or strongly motivated students who are impatient to get ahead to graduate study, to professional school, or to careers.

Flexibility and Faculty Growth

Faculties as well as institutions benefit from the re-examinations and soul-searching which the acceptance of curricular flexibility brings. Willingness to admit that some students can learn more than others, that some need more attention than others, that some deserve more than the minimal requirements, this marks a faculty willing to subject its requirements and programs to the test of workability. While it must be recognized that teaching methods are determined largely by the interests and abilities of individual faculty members and not by administrative decree, still there is much that can be done to encourage development of those practices which contribute to flexibility in rate and depth of student progress, and indirectly to faculty growth.

There is increasing faculty interest in curriculum improvement and concern for superior students. Committees on the gifted are being formed; individual instructors are being encouraged to modify what they do in order to stimulate their top students.¹ Budgetary provisions are being made to permit special sections for the gifted, special honors programs for those who can benefit most by them, and special guidance for the bright boy and girl.

Flexibility and Student Learning

One way in which colleges and universities can make it possible for students to work up to their capacities is by putting into the curriculum sufficient opportunity, direction, and encouragement for flexibility in rate and depth of progress so that those with a big intellectual appetite may feast fully at the table of learning, so that those who can carry a heavier than normal load are encouraged to do so. A student should move ahead just as far and as fast as he can go. He should be permitted to get the most learning he can for his money.

One of the most important justifications, therefore, for seeking greater flexibility in the undergraduate course of study is to aid

¹ See, for example, *The Superior Student*, Newsletter of the Inter-University Committee on the Superior Student, University of Colorado, Boulder, published regularly since May 1958.

the gifted students either to finish college at an accelerated rate or to get more out of their 4 years than would normally be the case. For the below-average student, there are remedial courses and additional counseling. Indeed, for a number of years, colleges spent more time, money, and attention on their poorer students than on their better ones. But this situation is rapidly changing.

Furthermore, in any class, no matter how outstanding, there must be a lower half. In any group there must be a marginal individual. A particularly difficult problem may exist even for the highly able student in an institution whose selectivity is such that only outstanding persons are admitted. When such a student discovers he is not doing as well as he expected, he faces a lonely, saddening type of adjustment. In some instances, he rolls up his sleeves and works all the harder to live up to expectations. In other instances, he throws up his hands in despair because he is not doing well enough, with the result that he finally fails. Some students cannot take not being at the head of their class.

How much can we expect students really to learn in college? The answer to this question touches on the motivation for going to college these days and on the ability of the colleges to channel these motivations into purposeful development of human resources. Effective use of flexibility in curricular arrangements and instructional methods can be not only a strong encouragement for students with seriousness of purpose but also a strong deterrent to applications from students with superficial motivations.

Flexibility, Admissions, and Attrition

Colleges with selective admissions policies have a number of reasons for modifying the standard curriculum. Frequently, a college student who has been first or second in his high school class and who has received high grades without ever extending himself comes to college expecting to continue his distinguished record without much more exertion than he had expended before. It comes as a shock to such a student that anyone else in the class is just as distinguished as he. What is more humiliating is that his classmates are not interested in what sort of record he maintained in secondary school, and his instructors are not impressed with his previous grades. The lofty high school senior becomes a lowly freshman.

Another group in the high level ability category are those who in high school got high grades because the rest of the class did less well than they. As a result, they may have been encouraged to reach beyond their level, and undertake an impossibly difficult

course of study in college. Thinking they have the ability to learn anything, they are motivated more by pride in their own intelligence than by intellectual curiosity. When they make just average grades they are startled. They face the necessity of learning humility.

The marginal student in a highly selective institution is also in need of special attention. Frequently extra guidance is called for if this person is to be salvaged before academic disaster occurs. Some institutions are concerned about this type of marginal student and attempt to assist him in recognizing the realities of the situation, in revising his or his parents' expectations, and in helping him to achieve a satisfactory record in the face of more promising classmates. At the Massachusetts Institute of Technology, for instance, a member of the Dean's office staff is especially designated to provide special counseling for students on academic probation, and all students on probation are urged to avail themselves of this service. In addition, the student who needs counseling in greater depth also has available the advice of a psychiatrist to help him develop a fresh perspective on where his problem lies. It is evident, however, that in many institutions there is insufficient concern for students who have the ability and the high school record to do satisfactory work, but who drop out.

Not only is there a need for flexibility in programs to compensate for differences in abilities of students admitted to college; another major reason for enhancing curricular flexibility is to reduce undergraduate attrition. Student drop-out is a waste of both institutional and human resources. At the present time, only about 40 percent of those who enter college graduate in 4 years and probably no more than 60 percent of all persons who enter college ever graduate.² Some of those who fail deserve to do so, of course. Others no doubt find that they have chosen an institution or a program inappropriate for their particular needs. Still others find that they are unable to continue in college for financial reasons. On the other hand some of those with ability to do college work leave before graduation simply because they lose interest or have not been sufficiently stimulated by their courses of study.

Statistics can be misleading, particularly statistics about student behavior. Measures of interests and motivations are being developed to supplement measures of scholastic ability as a basis for admission practices designed to match students and institutional objectives. Once the students are admitted, curricular flexibility,

² U.S. Department of Health, Education, and Welfare, Office of Education, *Retention and Withdrawal of College Students*. Washington: U.S. Government Printing Office, 1958, p. 16. (Bulletin 1958, No. 1).

improved instruction, and better counseling may be important factors in salvaging a substantial proportion of those students who might be tempted to leave college for real or superficial reasons.

Too Much Flexibility

There is a danger, of course, from too much flexibility just as much as from an inflexible curriculum. Ideal flexibility is not realized through a totally free elective system. It is not achieved by complete permissiveness, nor by shaping the curriculum to the whims of the student body, the alumni, or the public. It is not gained by weakening the liberal arts. Institutions have too long been too passive in catering to the demands for this course or that, this special program, that special device. We cannot expect that all adolescents know their own capabilities or what is best for them. Flexibility for flexibility's sake could make higher education little better than an intellectual department store where the customers decree the bargains, select their wares without benefit of advice, and pay pathetically little for a hodge-podge of educational bric-a-brac. On the other hand, there are numerous ways in which purposeful flexibility can be used to give breadth and continuity to learning, as we shall see in the sections which follow.

Types of Flexibility

Consideration will be given here to the different types of flexibility which currently characterize the courses of study at some of the better institutions of higher learning in the United States. For convenience of discussion in this report, the various forms of flexibility are treated under three headings, arbitrarily established to form a framework: Flexibility through Skipping or Substituting Courses, Flexibility through Course Patterns, and Flexibility through Teaching-Learning Practices. These groups are not mutually exclusive, since some forms of flexibility have characteristics appropriate for all three headings. However, these groups do facilitate discussing together those forms of flexibility which are related by purpose or by practices involved.

The reader is reminded that examples are based on observation or discussion at the 13 institutions visited by the author in his study of the operation of and possibilities for flexibility in the undergraduate curriculum. Programs similar to those described are operated at other institutions, either under the same general names

or similar names. Each institution uses numerous variations of the types of flexibility, each adapted according to the combination of the particular subject being studied, the particular qualifications of the students being served, and the particular instructional skills of individual staff members involved.

At M.I.T., for example, a student's program is a "variant program" if it is either accelerated or expanded beyond the average catalog recommendation. Among the ways this can come about are receipt of degree credit at entrance, overloading, receipt of advanced standing credit by examination, or having a prerequisite course requirement waived. Of the class admitted in September 1961, about a fourth had received some credit at admission, but by the end of their freshman year, more than half of them had variant programs. The programs of most students become "variant" by the end of their 4 years.

In terms of flexibility, officials at M.I.T. state that it is the intention of the faculty to give each student every opportunity to assemble an individual program which suits his interests and his needs. Within the course-system framework, a student who wishes to embark upon an unusual program need only satisfy his registration officer on two counts; namely, the program must be focused at a proper educational objective, and in the interest of his own academic safety the student must convince his registration officer that he has the necessary abilities and background to get satisfactory grades in any advanced courses that he elects. Furthermore, individual faculty members are allowed extreme freedom in the manner in which they teach their courses. Experimental teaching innovations are encouraged, and a senior member of the faculty has been appointed to keep himself informed of these experiments and to publicize the more successful ideas. While recognizing inter-relationships among types of curricular flexibility, of which the program at M.I.T. is just one example, the following discussion deals separately with the various forms of flexibility in order that the reader may compare differences in institutional practices.

Flexibility Through Skipping or Substituting Courses

The criterion for classifying types of flexibility for discussion in this group is that, by demonstrating the required level of proficiency, a student may be permitted to omit certain courses normally in his program; whether the student gets credit for these courses or how the rest of his program is affected as a result of omitting the courses is not a factor in determining the classifica-

tion. For example, although some schools do use these forms of flexibility to give the able student a choice between enrichment and speeding up his total program, others allow acceleration in certain courses only to permit enrichment in breadth or depth by substitution of other work.

At Brandeis, acceleration is not encouraged but freely allowed. The basic attitude here seems to be that no student should rush through, that five courses should keep a student busy, that flexibility should be employed for enrichment but not for acceleration. However, it is recognized that for some students acceleration may be necessary or desirable or both.

At the University of Chicago, acceleration is possible by means of the placement system and the general education tests. The general education requirements are defined in terms of 10 year-courses. Eight is the maximum required of any student. Hence a student who is excused from three or more will be in some degree accelerated. Last autumn 15 percent of the entering students received placement recommendations producing less than one quarter's worth of acceleration, 12 percent earned one quarter's worth but less than two, 6 percent earned two quarter's worth but less than three, and only 3 percent earned a full year's acceleration or more.

In general, then, the teaching-learning techniques prevailing at an institution are likely to be the prime consideration it uses in determining whether work is subject to flexibility through skipping or substituting courses, and the institution's philosophy and objectives determine whether the resulting acceleration must be used for enrichment or may be used for speeding up the student's program. Flexibility practices which permit the able student to skip certain work, with or without the substitution of other courses, depending upon institutional policy, generally fall into the following types: advanced placement or advanced standing, early admission, and credit by examination.

Advanced placement and advanced standing.—Among the more promising examples of flexibility are the advanced placement program sponsored by the College Entrance Examination Board, and a variety of other advanced standing programs sponsored by individual institutions to conform to local conditions. These practices, and the extent to which they are used by colleges and universities, are discussed in considerable detail in No. 8 of the *New Dimensions* series.³ They involve the awarding of advanced standing in college work, with or without credit, on the basis of college-level

³ Shirley A. Radcliffe, "Advanced Standing," No. 8 in the series on *New Dimensions in Higher Education*. Washington: U.S. Government Printing Office, 1951. 24 p.

work during high school. The programs have been developed in the process of eliminating duplication between high school and college. Among their important contributions, besides providing flexibility in progression rate, is the encouragement of better teaching and more purposeful learning in secondary school.

There is a wide variety in the way in which colleges operate advanced placement or advanced standing programs, each institution formulating its own policies to conform to its objectives. Only programs at the 13 institutions represented in this study on flexibility are reported here, but their practices are generally representative of those in other institutions.

At Stanford University a limit of 6 quarter units in any one department and a maximum of 45 quarter units are allowed. Advanced placement is most frequently given in the field of foreign languages, about a hundred students receiving advanced placement in this area annually compared to only a few in English, science, and mathematics.

At Oberlin College there is no maximum placed on the amount of academic credit a student may receive by way of advanced placement. Thus far the most a student has received is 15 points. At the present time, approximately 15 students a year ask for advanced standing credits. The Oberlin faculty takes great care in evaluating its advanced placement candidates. The departments interview the students concerned, although a score of 3 or higher on an Advanced Placement Examination qualifies a student for advanced standing consideration.⁴ In some cases, additional examinations are given.

No maximum is placed on the amount of credit which a student may receive at Brandeis through advanced placement. Students with such credits may enroll in courses not normally open to freshmen and may, in some instances, complete degree requirements in fewer terms in residence. The rule of the faculty is that a candidate who receives an examination grade of 3, 4, or 5 in an Advanced Placement Examination (a) will be considered to have satisfied the equivalent course requirement, (b) will be eligible to take a more advanced course in the area of his examination, and (c) will be awarded semester hours credit comparable to the number awarded for the completion of a similar course at Brandeis. Entering students who do not qualify for advanced placement on the basis of participation in the Advanced Placement Program may, in certain areas, become so qualified on the basis of (a) College Board scores or (b) special departmental examinations.

To some of the faculty at Brandeis the problem of advanced

⁴ The maximum score on a CEEB Advanced Placement Examination is 5.

placement is viewed as an esthetic question. There is, after all, a certain artistry in curricular arrangements which avoid duplication or forestall boredom. The issue of credit is not uppermost in their minds. If credit is an easy device for recognizing student accomplishment and rewarding secondary school excellence, then credit should be awarded, by all means. The more compelling reason for supporting advanced placement, however, is simply the view that no student should be required to take a course in which he can demonstrate knowledge of that course in advance. Be that as it may, students at Brandeis and elsewhere probably attach more significance to advanced placement than do faculty members. And secondary school teachers probably place more significance on the credit aspect of the program than do the students involved.

At some institutions, a stated maximum of college credits is attainable. The University of Michigan, for instance, normally accepts up to 16 semester credits of advanced placement, but has allowed as many as 24. To qualify for such advanced credit, students need to earn 3 or better on the Advanced Placement Examinations.

The University of Chicago places no limit on the quantity of advanced placement credit. Scores of 4 or 5 usually receive credit. The College's own placement and accreditation tests are, however, the more normal way of earning acceleration at Chicago.

The opportunity to enter Yale with advanced standing is open to the student who makes excellent scores on entrance examinations or on the Advanced Placement Examinations. Students whose work qualifies them are eligible for Distributional Credits and/or College Credits. Such awards enable the superior student to enter directly into higher courses and thereafter to attain a greater freedom and flexibility in arranging his program of studies in future years or to accelerate his academic career as much as his talents and interests justify.

Distributional Credit is granted to the student whose entrance record in English, history, language, mathematics, chemistry, biology, or physics gives evidence of achievement at a sufficiently high level to have anticipated the main content of a subject in the distributional requirement (plus mathematics) of the College. The credits thus earned free the student to take, as a freshman, advanced courses in the field where they have been won, to take courses in other areas of his interest, or to repair any deficiencies he may have in his preparation for college.

College Credit, that is credit toward the degree, as well as Distributional Credit, is granted at entrance to students who have had an Advanced Placement course or its equivalent in secondary

school and who score 4 or 5 on the Advanced Placement Test. In addition, College Credit may be granted to the student who has acquired Distributional Credits without College Credit at entrance, and who has done satisfactory work during freshman year. The student receiving College Credit may proceed faster to his major field of interest, undertake special and advanced work in areas in which he is qualified, reduce his formal program of studies during succeeding years, or reduce the time required to complete the undergraduate program.

The cut-off score for Distributional Credit on the advanced placement tests varies at Yale, department by department. In some departments, a score of 3 is required; in others 2, is acceptable. Apparently, the faculty at Yale is less interested in the test score than in the secondary school which the entering freshman attended. Indeed, students with different test results may receive the same amount of credit on the basis of other factors related to the school from which they come. Although it may appear that Yale takes a relatively generous attitude toward the scores made on the advanced placement examinations, actually a good deal of care is taken in evaluating the test results instead of accepting the scores outright. For example, the tests are read in the English and foreign language departments as a basis for determining acceptance of scores in these fields.

Apart from giving credit, Yale requires a student to enter a course at the level at which he has been placed in order to eliminate any overlapping between secondary school and college. The exceptional student, it is believed, should not repeat the ground he has already covered. Harvard follows a similar policy on the grounds that if a student is permitted to reject his advanced placement, the institution is discouraging flexibility and encouraging overemphasis on grades. This policy is sometimes difficult to enforce, but an attempt is made to hold the line and urge that students not take work below their capabilities.

A large segment of M.I.T.'s student body is advanced placement minded. Of an entering class of 868 students in 1961, 237 took one or more of the CEEB advanced placement program examinations and 208 received credit for 436 courses. Freshmen can also receive degree credit at entrance by presenting college transcript evidence or by taking advanced standing examinations at M.I.T. All together, 25.8 percent of those entering in 1961 received degree credit at entrance for 507 courses.

At California Institute of Technology, about a fourth of the entering freshmen receive advanced placement in mathematics. At

the end of the first year, these students have covered either two-thirds or the whole of their sophomore mathematics.

It is at Harvard that the principles of advanced placement are most ardently defended and the administrative procedures for operating a program most carefully worked out. In addition to the subjects in which there are Advanced Placement Tests, Harvard awards advanced placement when appropriate in Far Eastern history, Greek, music, and Russian. Published statements seem to indicate that Harvard is doing more with advanced placement than any other institution, is more generous in the award of credit, more certain of the rightness of its position, and more willing to experiment in this area than any other college. And Harvard is probably currently reaping more benefits from the advanced placement program than any other institution.

A full-time director with a travel budget administers the program. In most fields students with scores of 3 or better on the Advanced Placement Examinations automatically receive advanced placement without consultation with the department concerned. This is justified in terms of consistency and efficiency. Apparently, as long as the institution is satisfied with the tests, and as long as central reading and the same type of examination are continued, Harvard is willing to abide solely by the test results. This arrangement relieves departments of the details involved in evaluating advanced placement credentials, although a certain amount of close departmental evaluation is useful in orienting faculty members to the values of the established tests.

If a student entering Harvard scores 3 or higher in three Advanced Placement Examinations, he is given sophomore standing. In addition, the general education requirement is reduced for advanced placement sophomores. In other words, Harvard is willing to say that completion of 3 college-level courses in secondary school is to be accepted in lieu of the $4\frac{1}{2}$ college courses normally taken by a freshman at Harvard. This is justified in view of the fact that a student taking 3 college-level courses in high school would have had a different type of preparation for college from what is normally the case. In other words, the quality of the material studied and of the secondary school instruction is considered most important. Furthermore, a sweeping gift of a year's credit in this fashion removes the student's uncertainty about what academic credit he will get for his advanced placement work. The arrangement at Harvard is clear-cut and enticing, in contrast to the uncertainty and almost grudging release of college credit at some other institutions.

The implications of the Harvard position are far-reaching. What

Harvard seems to be saying is that everything that applies to the freshman course at Harvard can apply to the secondary school. Unlike the regulations at some colleges, a secondary school course is not explicitly required of an advanced placement candidate, but the philosophy of the program would suggest that this is expected. At the same time, this kind of "ex post facto" acceleration would seem to be on firmer ground when it is clearly and specifically indicated that a college level course has been taken in high school.

The statistics on advanced placement at Harvard are impressive. In 1961, the seventh year of its operation there, 540 entering students coming from 215 schools submitted scores on 1,396 Advanced Placement examinations. On the basis of these, 906 awards were granted, 452 candidates received advanced placement, and 134 were eligible for and 102 accepted sophomore standing. The performance of advanced standing students during the years the program has been in use at Harvard has been most encouraging. Of those who graduated by 1961, more than four out of five received degrees with honors and more than three out of four graduated in 3 years.*

In addition to bolstering excellent secondary school teaching and improving the education of the gifted, an important objective of the Harvard approach to advanced placement is to free the man rather than to encourage acceleration. Despite the fact that some students skip their freshman year through advanced placement, it is not expected that all of them will want to graduate in 3 years. Advanced placement to the sophomore year will, it is expected, give leisure to the student in his fourth year to do whatever he wishes: to attend courses, to take an additional senior tutorial, to read on his own, to take graduate work. If he wants a degree at the end of 3 years, he will receive one. The dominating motivation appears to be to let the gifted student decide what his program will be.

However, one can detect a certain ambivalence in the Harvard position. On the one hand, the institution has jumped with both feet into a bold, enterprising educational reform that admits outstanding high school graduates into the sophomore year. This is acceleration with deft sureness and uncompromising courage. On the other hand, Harvard has great respect for the 4-year undergraduate program and it is almost unthinkable to some persons that anyone should not want to spend a full 4 years there as an undergraduate. There are obviously more courses available than a student could possibly take. The prospect of 2 senior years is viewed

* Edward T. Wilcox, Director, *A Report to the Faculty of Arts and Sciences on the Program of Advanced Standing, 1955-1961*. Harvard University, Cambridge, Mass., Mar. 6, 1962.

as a gain rather than as a possible letdown after an earlier acceleration. This is an aspect of advanced placement to which sufficient attention has probably not been given.

Harvard's ambivalence is no better seen than in the attitude toward the taking of graduate courses by advanced placement students in their fourth year. At the present time advanced placement students may apply these graduate courses toward a master's degree after the first term that they are bona fide graduate students. This may result in a financial benefit to the student, but it is implied that such a scholar must prove himself before the graduate credit is won. In other words, Harvard is taking the same position at the graduate level that some institutions take at the freshman level toward advanced placement students.

It is too early to evaluate the Harvard advanced placement position. However, it is not too early to see that even at Harvard some pressing questions relating to advanced standing are still being resolved. Among them is the attention to the problem of providing advanced placement students with the additional guidance they need in order to take advantage of all their opportunities under this program and a fuller explanation with regard to the options available. Attention is also being given to the effect sophomore standing may have on the entering student's chances for admission to graduate and professional school.

One byproduct of Harvard's advanced standing program has been the attraction of gifted students to Cambridge. Other institutions also have come to see in the advanced placement program a selling point almost as attractive as scholarships and employment offers.

There are many advantages in the sweeping approach toward advanced placement credit. It encourages the high school to intensify programs for gifted students, and it provides a real incentive to the enterprising student with outstanding ability. It gives the excellent secondary school a tangible type of recognition for work well done, and it is a welcome modification of the old lock-step year-by-year progress from kindergarten to the Ph.D. The limitation in giving only a handful of academic credits is that it may tend to encourage overspecialization. On the other hand, academic inflation could result from an overly generous allotment of college credits for work taken in secondary school. In any case, though, it must be recognized that the receipt of advanced placement credit serves as strong motivating influence upon the bright undergraduate who is encouraged to do better work in college than he normally would do.

Another type of advanced standing is available at U. C. L. A.,

through the High School Special Program. Begun in the fall semester of 1958, it allows selected high school seniors to take college work (a maximum of 8 units per fall and spring semester) concurrently with their senior year in high school. To date, the cumulative grade point average of these students has been 3.27. One hundred nineteen new students from 13 high schools participated in 1961-62. There will be 14 schools in the program in 1962-63. For the superior high school student who lives within commuting distance of a college or university, this type of arrangement has much to offer in terms of flexibility, and a number of other institutions have established similar programs. In fact, as a result of 1959 legislation, California junior colleges routinely admit to part-time study superior twelfth-grade students who continue to attend high school for at least a minimum school day. This type of flexibility between levels of the educational continuum, called "flexible progression" by the Coordinated Education Center at the University of Pittsburgh, seems to be growing in popularity with the spread of junior colleges.

Early admission.—A few years ago early admission appeared to be the most promising type of flexibility being tried in the colleges. Sparked by grants from the Fund for the Advancement of Education, 11 institutions pioneered in conducting an experiment to ascertain whether tenth- and eleventh-graders with exceptional ability could succeed in college by skipping their last year or two of high school. Although these institutions still admit some "early admission" students, and although a few other colleges have modified their traditional high school graduation requirement for admission, there is now little disposition in institutions of higher learning to recruit eleventh-graders for college. Some type of advanced standing approach appears to be much more attractive than early admission as a flexibility device.

For some years, the institution most interested in early admission seemed to be the University of Chicago. But even the University of Chicago now takes a relatively small proportion of "early admission" students in its freshman classes, compared to earlier years. However, it is apparently pleased with their quality. Reports indicate that what failures have occurred have been for social and emotional, not academic, reasons.

Only a handful of early admission undergraduates are found at other institutions. At Reed College, the faculty neither encourages nor discourages early admission applicants. There are some early admission students at Oberlin, about two or three a year, the same number as at Reed. There is no rule against early admission at Brandeis, but the number so admitted is only two or three a year.

The institution has had mixed experience with early admission and the program is not being emphasized. Harvard takes a few "early admission" students but there appears to be no strong interest in expanding the program, and it has been limited to only the exceptional.

Although Yale takes a few "early admission" students, its approach to early admission is best described as gingerly and hesitatingly unenthusiastic. There are some reservations about its appropriateness, particularly in view of the rapid increase in the popularity of the advanced placement program. It is felt by many that 15- or 16-year-olds are not mature enough for the freshman year at New Haven, and no one appears to be making a special drive to attract more of this type of candidate. The statistics showing the scholastic success of students in the early admission experiment which were detailed in *They Went to College Early*,⁶ are not refuted at Yale; they are just overbalanced by other considerations, as they are at many other institutions.

Credit by examination.—The practice of granting credit by examination is older than advanced placement and broader in scope. However, policies vary widely,⁷ not only among institutions but among departments within institutions.

Long before advanced placement programs gained popularity, examination credit was used by many colleges as a means of placing particularly able students in advanced levels of different courses, depending upon their special competencies or prior experience. Originally, examination credit was used primarily in such subjects as languages, on which competencies are relatively easy to measure. Experience with the influx of veterans following World War II contributed to expansion of examination credit practices to the point that, instead of handling each case separately, many institutions now have definitely stated policies regarding this form of flexibility. Some institutions permit a student to challenge for examination credit any course on which he shows evidence of competence equal to that of students normally completing the course; others permit examination credit only in certain specified courses. Some permit credit for acceleration; others permit only exemption and enrichment.

Number 9 of the *New Dimensions* series gives detailed information about examination credit in its relationships with, and influence upon, the credit system.⁷

⁶ The Fund for the Advancement of Education. *They Went to College Early*. New York, The Fund for the Advancement of Education, 1957. 117 p.

⁷ Lanora G. Lewis, "The Credit System in Colleges and Universities," Number 9 in the series on *New Dimensions in Higher Education*. Washington. U.S. Government Printing Office, 1961. 37 p.

The examination credit practices of the 13 institutions represented in this study suggest something of the variety of practices in institutions as a whole. At U.C.L.A., for instance, there are certain courses in which credit by examination is permitted. To many students in the honors program there, this is a shortcut. At San Francisco State College, credit by examination is arranged by permission of the instructor, subject to the approval of the divisional chairman. The student takes his chances, however, because whatever grade he gets on such an examination goes on his record, as it does at U.C.L.A.

One illuminating—though extreme—case at San Francisco State College illustrates the value of credit by examination. A Vice Consul of the Nationalist China Consulate in San Francisco came to the college to take an A. B. degree preparatory to graduate work in international relations. No records of any previous college work were available for deposit with the college; so a full 120 units of work were required for the degree. He graduated in 2 years, with 59 units of "credit by examination" on his record—examinations taken in 7 different fields, under 13 different instructors. The next year, he went on to Stanford University where he received his master's degree with a straight "A" record.

At Yale, students may take anticipatory examinations when they arrive in New Haven, but not many do so. Another permissive feature at Yale is the arrangement by which freshmen may audit a course. If they keep up in the assignments and pass the work, they may expect to be enrolled in the course and receive credit. This is a type of retroactive registration that passes as credit by examination.

In general, institutional policies on examination credit, like those on advanced standing, are related to the prevailing philosophy with regard to acceleration and enrichment. As a flexibility device, credit by examination has been found rather easy to administer because it demands a minimum of change in the established curriculum and the prevailing teaching techniques of the institution. In recent years, there has been growing interest in examination credit as a means of validating college-level competencies achieved in connection with television courses, courses at industrial plants, independent study, and other experiences outside regular college curriculums. New York State's recent appointment of a consultant in the area of college proficiency examinations is an example of action growing out of the interest in coordination of institutional practices in this area.

Flexibility Through Course Patterns

The criterion for classifying types of flexibility for discussion in this group is that the primary emphasis is upon special courses or special sections for exceptional students or upon practices which permit the exceptional student to arrange his course load in a manner different from that of average students. In other words, the primary emphasis is upon depth, breadth, and enrichment through the curriculum, rather than upon acceleration of individual progress or upon teaching-learning methods.

In general, these types of flexibility involve greater attention to curriculum planning both by the institution and by the student than do the types of flexibility discussed in the previous group, and some acceleration may be incidental to these programs. On the other hand, they seek to provide flexibility with a minimum of change from traditional classroom teaching-learning techniques, although instructional practices with special groups naturally differ from those with average students.

Special courses and special sections.—Some institutions achieve flexibility by offering special courses for exceptional students. There are provisions for special reading courses at the California Institute of Technology. At San Francisco State College there is a course on readings in the humanistic classics which is open on invitation only. Reed offers a course in general chemistry to a selected group of students who have had good high school records in chemistry and who pass a special examination. In effect, it covers a full year's work in one semester.

In each department at Hiram College, there are special problems courses open to senior majors with a B average. There is also an advanced drama course at Hiram in which students may receive credit for directing plays of their own writing.

It is perhaps in the sciences that special courses for students with marked ability are most productive. Flexibility has always been practiced in the physics department at the University of Michigan, for instance, where it is possible to move a bright student into advanced work when he is ready for it. One method of doing this is by a higher level introductory course which enables a student to go ahead as fast as he can. This has some advantage over advanced placement, it is believed, in that the college has greater control over what introductory work is taught, and it may result in a saving of time for the student compared with the typical college-level advanced placement course in high school.

The physics department at the University of Michigan is of the opinion that it can give an introductory general course at any required level of maturity or sophistication. On the theory that there are disadvantages in having a bright student going immediately into the specialized part of a subject, it prefers to have special introductory courses for exceptional students rather than jump them into advanced work. A capable student, it is believed, deserves more than specialization at first. Bright freshmen, the department maintains, should learn with their age group rather than with the average student 2 years or so older, for a freshman is still a freshman even if he is brilliant.

The Unified Science Program at the University of Michigan has an interesting feature worth noting. It incorporates a research tutorial course in which the participating student serves as a research assistant for a staff scientist. Valuable research experience and a more personal association with the University research program are provided. The student is expected to put in about 5 hours a week for each hour of college credit.

The California Institute of Technology has a special type of flexibility in the freshman physics course. In the laboratory, instead of performing experiments assigned to a group, students work on the experiments they want to do in order to illustrate what they have learned in class. They have access to the laboratory journals of the faculty and, of course, may get help from their instructors when needed. Essentially, however, the traditional approach to experiments has been discarded and, as a result, the better students are stimulated to think for themselves, to strike out on their own without benefit of a crutch in the form of a lab manual. Some students have difficulty adjusting to this. Many learn humility quickly. The brilliant, creative science student, however, proves himself more rapidly in this type of laboratory situation than in the more traditional one.

Other institutions are attempting similar arrangements in their science courses. At Oberlin, both the biology and psychology departments are putting students more on their own in the laboratory. Some institutions make provisions for interested students to do original research in the laboratories.

The Massachusetts Institute of Technology not only has provisions by which a student may do extra laboratory work on his own. There are also opportunities for students to work as part-time assistants. Even freshmen are allowed to do this, but not many of them take advantage of it.

In upperclass laboratories at Reed, individual responsibility and initiative are encouraged in similar ways and research is empha-

sized. Laboratory work may be a part of the senior thesis, and some seniors assist in work covered by research grants.

Letting students teach in the elementary laboratory is another device for encouraging excellence. At Reed, all "lab assistants" in the freshman physics course are seniors. Their work has been rated as highly successful. The science laboratories at Hiram are left unlocked day and night and a student may work there at any time on experiments he wishes to perform.

Science and mathematics departments in other institutions have also established special courses for students with high ability. At Hiram College, for instance, there are three different levels of freshman mathematics.

At Brandeis University, freshmen who choose to take a course in mathematics, physics, or chemistry, in place of the "general education" course in physical science, may commence their college work in these fields at one of several levels. The Mathematics Department offers four courses for freshmen, the most advanced being an honors course exclusively in calculus. Physics offers three introductory courses, the most advanced requiring an elementary knowledge of calculus and covering in 1 year what is normally covered in 2 years of college physics. The Chemistry Department offers a one-semester concentrated course in general chemistry, for those students who are able to handle it.

That flexibility is practiced in professional fields as well as in arts and sciences is proved by the success of the newly revamped course of study in the department of electrical engineering at the Massachusetts Institute of Technology. The sequence of courses in the core program of this department is "intellectually open-ended" and appealing to both students and faculty. Every student takes the same basic sequence, devoid of the old specialization and organized around study of the universality of field phenomena in electrical energy. The laboratory work in the department is organized around a project approach.

The new plan solves the problem of what to do for the superior student, a problem that plagued the department when its courses were organized in the traditional sequence. By putting the above-average students in special sections which take them farther along in the subject, the department is able to give the most promising undergraduates a type of enrichment which, it is believed, has paid off.

In the VI-B course in electrical engineering the approach represents "option in depth" rather than free electives or a heavier than normal program for the exceptional student. In each of 2 groups are 20 to 25 students, admitted by invitation and in most cases

headed toward doctoral study. Students take the same number of subjects as other students but not the same subject matter. They cover the standard material of the course quickly and go on digging deeper. Instructors can try out their new ideas and students can take initiative in learning the subject and in the use of the laboratory. Sometimes students team up with faculty members on research projects. Quizzing is done independently and at greater depth than in traditional courses and there is less attention to grades. The program appears to be working well and student reaction has been highly favorable.

Another area at M.I.T. in which there are special courses for exceptional students is in the humanities. A small group of freshmen (about 20 of the 900 entering students) with unusual training and facility in French are permitted to do the 2 years of required humanities in French. They do not read the same books as the rest of the class, but do parallel readings. This experience improves their excellence in French while at the same time providing them with an understanding of the masterpieces of French literature.

M.I.T. also takes every opportunity possible to infuse language instruction into the scientific and technical environment. During 1961-62, not only could a student have studied his required humanities in French language classes, but he could have studied Dante in a course taught entirely in Italian, and he could have studied electronic circuit theory in a course taught entirely in French. The decision to have a course taught in a foreign language rests solely on the number of students interested in taking it and the availability of a qualified faculty member to teach it. Outside of classrooms, there is a "Russian floor" in one of the dormitories and a "French floor" in another where the students agree to speak only these languages. What is important here is that the students who live in these language areas are not language majors but science and engineering students who wish to maintain or increase their proficiency in the language.

In order to provide for some experience in creativity in the Humanities 1 course at the University of Chicago, studios are available and, at certain stages in the course, each student has an art project in which he tries to paint something and then writes a paper about the experience. The same approach is used in music where the students at one stage in the course try composing. This touch of creativity seems well received.

It is not always easy to distinguish special sections within established courses from special courses for superior students. In the freshman English course at Hiram sectioning is on the basis of ability. Similarly, there are honors sections in Harvard's General

Education program for high scorers on the College Board tests. The California Institute of Technology for many years sectioned courses on the basis of ability and resectioned them at the end of the freshman year.

English composition is a favorite field for *sectioning by ability*. There are special sections for the gifted student in the freshman English courses at the University of Michigan and at Stanford. At the latter institution, these involve an attempt to select more rigorous types of reading materials, to raise the level of work done without increasing the quantity of reading and writing required. Instead of writing weekly papers, students write fewer long ones. They do not receive extra credit for participating in a special section, but there is some feeling that they should.

At San Francisco State College there are some special sections for the gifted in the general education courses. In Humanities 30, for instance, the instructor can select some of his better students, put them on an individual study basis, and meet them in a special class for extra credit. Similarly, one of the four sections in Social Science 20 is designed for the able student and a variety of assignments is tried out during the year. Special sections of freshman English are also available in the second semester for students who show talent in creative writing. These sections are taught by members of the creative writing staff and students do a special kind of writing in line with their interests and talents.

In the required course in the humanities, M.I.T. encourages experiments within the general boundaries of purpose and content described by the steering committee. In one such experiment a few years ago, a dozen of the top students were invited to enter a special section in which each would read twice as much, write twice as much, have to do more independent work, and take his chances on grades. Not 1 of the first 12 declined the risk. Through the 4 years, they remained a superior group, providing a disproportionate share of campus leaders.

According to the dean, who conducted the initial experiment and then turned it over in another term to a colleague, such sectioning is not without certain drawbacks. There were at least 200 students in the freshman class who could have done as well as the dozen, and there was no way to provide 16 such sections or to continue the technique in subsequent related subject matter. Had classes of this type been available to all who seemed to deserve them, most of the bellwethers would have been taken out of regular sections. There is still the moot question whether, in massive courses, the interests of the best students are advanced much by grouping them together or whether lesser students suffer from having the best ones ex-

tracted from the common experience. No one knows whether lesser students would learn to shine more brightly if they were not outdazzled. At any rate, this particular sectioning arrangement in humanities at M.I.T. has since been abandoned for other types of experimentation which are concerned with greater proportions of students.

In the freshman year at Yale there are two kinds of flexibility, vertical and horizontal, in operation. There are no required courses (except in English) which can be identified as specifically freshman courses. Before a freshman ever comes to campus, Yale devotes much time and attention to getting him into the right level of the courses he selects. Freshmen may be placed in 5 levels of chemistry, 3 levels of mathematics, and 6 of English. Freshmen are found in 10 different history courses. This vertical flexibility theoretically means that there should be no overlapping between secondary school and college. It also means that more attention can be given in the freshman year to individual differences. A horizontal flexibility is achieved by permitting a change of program at midyear. This is done in order to accommodate those students who are undecided about their fields of concentration or their vocations. The Directed Studies programs at Yale, which are designed to give qualified freshmen maximum flexibility in designing their total programs, are discussed in a later section.

In general, experiences at the institutions studied indicate that special courses and special sections can be used to provide flexibility with or without major changes in teaching-learning techniques; at the same time, by providing depth, breadth, and enrichment, acceleration is incidental to the student's program rather than a major factor in determining which courses he will take.

Heavier than normal programs.—Some students with a big intellectual appetite prefer to take heavier than normal programs rather than undertake special courses or independent study. Sometimes a heavy program is sought for the purpose of acceleration; sometimes it is simply for the purpose of getting more out of one's college experience. Institutional reaction varies, although heavier than normal programs are generally discouraged for most students. At Oberlin, where the normal load is 15 or 16 points a term, a student with an A average the previous term may carry 18 points and one with a B average may carry 17.

Brandeis University, which has a 5-course program, permits students who have the ability and the interest to petition to take a 6-course load for which they pay extra tuition. Approximately 10 percent of the student body take a heavier than normal program after the freshman year.

Yale also permits heavier than normal programs by petition. A large proportion of the students taking such programs are science majors or premedical students. Yale also permits a student to audit any class if he secures the instructor's permission.

At Harvard, which is on a 4-course basis, students frequently take 5 courses and it is permissible in rare cases for a student to take as many as 6 courses.

At Hiram College, a student with a 3.5 average may take an unlimited number of courses so long as he keeps his work at a satisfactory level. Designed for the superior student, this is called a tuition bonus plan.

At San Francisco State College, heavier than normal programs are permitted by individual advisers. There is no institutional objection to this.

Insofar as maximum load is concerned, Stanford imposes no limit on a student who maintains a B average. A number of students take advantage of this; a few graduate in 10 or 11 quarters.

Reed permits a range from 14 to 17 hours without petition and 18 or more by permission of the Administration Committee for underclassmen and of the Division for its juniors and seniors. Permission is not rare, but it seldom means acceleration.

Although there has been a trend toward year-round attendance in order to complete 4 academic years of college work in 3 calendar years, acceleration by means of heavier than normal loads has had few spokesmen on college campuses in the past. When acceleration by this means has been permitted, it has generally been in spite of or as an exception to the prevailing philosophy of the college. Therefore, although credit by examination and heavier than normal programs may enable a bright, eager undergraduate to speed up the acquisition of a degree, not many students are using these as a means of graduating in less than 4 academic years. For the most part, flexibility through heavier than normal loads seems to have been encouraged chiefly to enable superior students to broaden or enrich their undergraduate programs or to enter sooner upon graduate study.

Early entrance to graduate study.—It is surprising that not more institutions have used the device of permitting juniors and seniors to take graduate level work when they meet the prerequisites for doing so. This is a type of flexibility which has great merit. Of course, on some campuses there is no graduate instruction available. However, at a number of institutions there appears to be a reluctance to permit the able undergraduate to embark on graduate-level work before he has completed the total number of class credits

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required for the bachelor's degree, on the grounds that standards may be threatened.

At Yale, a student must secure permission from the Dean of the College and from the Dean of the Graduate School. Graduate work before completion of the baccalaureate is seldom taken in the humanities or social sciences, but is often permitted in the sciences. It is looked upon as something that has to be earned and is discouraged for all but the very few top students.

Some institutions are more permissive. Brandeis permits the election of graduate courses by undergraduates in the science departments where graduate study is considered more promising than independent work in achieving flexibility. There is no particular restriction on the course level which undergraduates may take at Stanford. However, graduate work taken by an undergraduate cannot be counted toward a graduate degree. There is a limited graduate program at Oberlin which offers the master's degree, and graduate students and undergraduates take the same advanced undergraduate courses. The University of Michigan permits undergraduates to take graduate courses, as do Harvard and U.C.L.A.

It is possible that poor articulation between faculties of undergraduate and graduate schools may be responsible for the reluctance of some institutions to provide flexibility by permitting early entrance to graduate study.

Auditing courses and other privileges.—Just the opportunity to audit courses of their own choosing is sufficient flexibility for some undergraduates. Frequently, a student with wide interests likes to "sit-in" on a course in addition to carrying a full program, without having to meet the examination and written requirements of that course.

Oberlin students do a considerable amount of auditing. Sometimes they participate in the discussion and take examinations. No college rules cover auditing. A student makes his own agreement with the instructor regarding his auditing. At Reed, auditing by fully registered students is at the option of the instructor, and occasionally credit is granted *ex post facto* for the work done by auditing students. Students at Brandeis University may audit any course they like, even in the freshman year, with the instructor's permission. At Harvard, auditing is permitted freely. At Radcliffe approximately half of the student body audits courses during their undergraduate careers. This is a simple privilege to arrange and for many students is a well-appreciated opportunity. To prevent indiscriminate and ineffectual auditing, however, some institutions restrict auditing of courses to upperclassmen.

Flexibility through student petition is another means by which

the curriculum can be modified to fit the individual student. At U.C.L.A. a student may petition for a waiver of a degree requirement in order to individualize his course of study, but he must maintain a good record to have his petition accepted.

The individual departments at Stanford can grant specific waivers or modifications of their major requirements. As long as such waivers are granted for good cause, this provides one means for giving the exceptional student greater flexibility. However, in this approach, there is a danger of abuse as well as the potential problem of inconsistency among the departments in the extent of leniency allowed.

Reading periods have been looked upon as another way to get more flexibility into the academic year. Reading periods of a week or more for courses from the freshman to the senior year are common at Reed, at the option of the instructor or the staff responsible for the course. Some advanced courses at Brandeis have reading periods of 2 weeks' duration between the last class and the final examination. In this period extra work is done by the student and additional reading is assigned. The reading period is not scheduled for the purpose of assisting students to cram for their examinations. In practice, however, this seems to be the use many undergraduates make of it at most institutions. Some maintain that the scheduled reading period tends to encourage procrastination among the weaker students, and that those who are alert and who have kept up to date on their assignments may not need such an extended period in order to prepare for their examinations.

At the present time, more in the way of flexibility is being done in the *senior year* than in the other years of undergraduate study. The reasons for this are obvious. Seniors are considered more mature than their younger colleagues. The staff is better able to identify those who could profit from special courses or programs. The unmotivated or mediocre students have for the most part been weeded out of college by the senior year. Although many feel that special courses of study or honors programs are more logical as culminating experiences in the 4 years of study, a growing number of institutions are establishing 4-year continuous honors programs which begin with entering freshmen. Yale's Directed Studies programs might be considered an example of this.

Flexibility Through Teaching-Learning Practices

Included in this classification are those types of flexibility which are the result of the way the student goes about increasing his

knowledge, the prevailing instructional practices of the teacher, or the teacher-student relationships in the learning process. Of all the types of flexibility, the ones in this classification differ most from the traditional classroom recitation-lecture system and from the traditional pattern of required and elective courses. Because they demand a change in the approach to education by both the student and the teacher, they are sometimes considered difficult to achieve by institutions. On the other hand, because they are designed to give every student the opportunity to progress as rapidly and study as deeply and as broadly as his particular needs and abilities indicate, these are considered by many to be among the most important and the most effective forms of flexibility for those areas in which they are appropriate. In general, they give the individual student maximum responsibility for self-direction and initiative to work in accord with his abilities and potential.

Organized independent study.—One of the most productive of these types of flexibility is a method of instruction known as independent study. At the outset, it should be recognized that independent study, per se, may be simply one facet of effective teaching and learning in any class. However, there are many types of organized independent study arrangements, some of which affect only a portion of the student body, others of which apply to the entire group. At some colleges, organized independent study is available in certain courses. At others, it involves individual student projects apart from formal courses. A few institutions require all students to have organized independent study experience in certain areas, on the theory that this method of instruction helps students develop learning habits which will make education a lifelong process. Other institutions permit organized independent study at the discretion of individual teachers. Still others reserve organized independent study for exceptional students, as in the case of many honors programs, or for special courses or areas, as in tutorial programs.

In recent years, there has been growing interest in organized independent study, partly as a result of increased administrative concern for the problem of utilization of resources, partly as a result of wide differences in student characteristics, and partly as a result of increased faculty attention to the implications of expanding enrollments. Some educators believe that the chief contribution of these programs has been in encouragement of more effective teaching and learning across the board, not just in the organized programs themselves.⁶

⁶ Robert H. Bonthuis, F. James Davis, and J. Garber Drumhal, et al., *The Independent Study Program in the United States*, Columbia University Press, New York, 1957, 253 p., is the most recent extensive survey of organized independent study programs.

As a deliberately planned method of providing flexibility, organized independent study programs reach a relatively small proportion of the total enrollment and cover relatively few of the curricular areas. However, as a method of instruction, often in conjunction with more traditional procedures, independent study seems to be gaining significance as a means of providing flexibility in the emphasis upon class time, thereby avoiding the waste of academic talent which results from rigid conformity of individual progress to group class work and group curricular patterns.

The independent study patterns at the 13 institutions in this study are representative of the variety of organized independent study programs at other institutions. The discussion is confined to deliberately planned independent study programs and does not cover that independent study which is simply part of the instructional process in any good teaching-learning situation.

At U.C.L.A. individual independent work is available for the better students through the "199" courses in the different departments. The student enrolling in such courses must persuade an instructor to take him on. As a culminating activity of the course, he must write a type of senior thesis or complete an independent project.

Brandeis has an independent study course, called English 90a and b, which is open only to students of superior ability and with the permission of the departmental chairman. The requirements of the course are simple. The independent study student submits for approval a proposed topic for a paper and a list of texts upon which he will be examined. There are also four half-year courses in independent reading in which each student reads works on an assigned reading list, submits a paper on an approved topic, and takes a final examination. In most of the Brandeis departments, independent study is achieved through sophomore and/or junior tutorials, reading courses, and, for approximately a third of the seniors, senior honors theses.

At M.I.T., there is a special problems course in just about every department. These courses allow the student to make a special arrangement with an instructor to work on something of mutual interest under the supervision of that instructor. The work can be laboratory work, library work, or even independent analytical research. Perhaps the institution's best example of independent study is the undergraduate thesis which is required for the bachelor's degree in every major except mathematics. The work load on such a thesis is equivalent to one and a half to two courses.

At San Francisco State College, independent study is permitted

to students who register for a course with a special number or for a course in a semester in which it is not formally taught.

One experiment in independent study is Stanford's Western Civilization course. At the end of the first quarter, an instructor selects the best 10 or 15 percent of his class and invites them to participate in independent study in the course. The students who undertake independent work do individual projects over and above the required work in the course. They are given one meeting a week, a 3- to 4-hour discussion session instead of the regular lecture meetings. They cover the subject matter of the course in half the time, and receive an additional unit of credit for successful completion of independent study.

The problem of follow-through is important here, however. What happens after a freshman has undertaken independent work in Western Civilization, one might well ask? Does he revert to the slower speed of his classmates in other courses? Obviously, the momentum must be continued, the gains made in independent work in the freshman year must not be lost. Experience has led several departments at Stanford to consider relaxing the rigidity of the lecture system by giving the individual instructor the option of reducing the number of formal lectures given in his course.

At some institutions, such as Oberlin, no pressure is put on the individual instructor with respect to how he handles his courses. When the individual instructor in his judgment can improve his course by reducing the number of formal lectures, he is encouraged to do so.

In 1958, the faculty at Oberlin voted a change from an organized independent study program to an honors program which will be described elsewhere. Apparently, the original hope that organized independent study would reach many students was not realized. Only about 20 percent of the student body participated, but those who did take part were favorable in their reaction to it. In the last 3 semesters, work in independent studies had maximum limits of 6, 9, and 12 hours, respectively. There will continue to be independent reading courses available for all students in their senior year.

Faculty utilization experiments have been providing additional incentive for flexibility and for independent study in the curriculum at Oberlin. In one such study, part of the students in freshman courses in mathematics, psychology, and zoology were released from attending the formal lectures for approximately 10 weeks out of the year. This group, matched on the basis of ability with a control group, undertook independent study, reading the same material as the rest of the class. Test results showed no appreciable difference between the experimental and control groups. The impli-

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cations of this are strongly in favor of flexibility in formal class time.

At Harvard, opportunities for supervised independent study are provided for selected entering students under the Freshman Seminar Program, inaugurated in the fall of 1959. Applications for participation in this program are cleared through the Office of Advanced Standing; final selection is made in each case by the faculty members concerned, based in some cases on interviews held during registration week. For up to 2 of the normal $4\frac{1}{2}$ courses, the seminars permit selected students to substitute supervised independent study, with the additional possibility of replacing one of the general education courses with equivalent independent work in writing.

Although these seminars have a variety of forms, they have certain common features. In each, a small number of freshmen in close association with a member of the faculty undertake as individuals or as a group intensive work in some mutually exciting field. Study or laboratory facilities are available where appropriate. Credit toward the requirements for distribution and concentration may be granted by the departments concerned and the Committee on General Education.

Some independent study is available to all students at Harvard in the form of tutorial instruction, beginning in the sophomore year. Those who qualify to continue as honors candidates during their junior and senior years may, upon recommendation of their departments, petition the Committee on Advanced Standing for a reduction in the number of courses required for the degree in order to free a portion of their time for independent work. Sometimes this independent work takes the form of expanded tutorial or individual research; at other times course reduction is used for the purpose of doing graduate-level work. This course reduction is not looked upon as a device for acceleration, but rather as a means of improving the quality of independent work done by the honors student.

The senior thesis, which is Reed College's independent study arrangement, is worth particular mention, although the complex Reed climate can hardly be summed up under an independent study program. In the junior year each student at Reed is given a qualifying examination, the purpose of which is primarily to ascertain whether he is ready to write a senior thesis. This examination, which covers both general and specific fields of study, has the effect of focusing the student's work. In his "Report to the Self-Study Committee," Elton Morison evaluated the qualifying examination in these terms: "Though it does not put a considerable intellectual and

emotional burden on a student, it is not obvious that many find the burden unbearable; indeed, it is quite possible that the examination can serve as excellent practice in meeting intellectual and emotional burdens of greater weight later on." The junior qualifying examination is considered of value not so much in the weeding out process as in getting across the idea that education is cumulative and that what the student does as an outcome of his formal class-work is not lost or overlooked. The examination has the catalytic effect of helping the student to realize that he must go on his own. It encourages a sense of responsibility and helps engender maturity in the whole student body.

There has been some criticism of the use of qualifying examinations on the ground that an unnecessary disappointment comes with depriving a student of his senior year in the institution with which he is most familiar. However, the experience of analysis and synthesis has been prized by some who find in it a culmination of their higher education and may never be faced with such a challenge again.

The thesis requirement in the senior year at Reed takes up much of the student's time and attention. Theoretically, it represents 4 out of the 14 hours for which he is enrolled. Although the thesis requirement is viewed as of value to all students regardless of their vocational objective, it is obvious that the experience is particularly useful to those going on to graduate school.

The mechanics are simple. The student selects, with the advice of a faculty member whom he has picked, a topic on which to write. He then meets with the faculty member as frequently as is considered necessary and embarks on an independent piece of writing which is due in May of his senior year. The thesis becomes the most important part of the student's program, the climax of his 4 years at Reed. After the thesis is submitted, a 2-hour oral examination is held by a faculty committee. Although considered a formality by some, this examination is usually taken seriously by both students and faculty, and searching questions are asked. The purpose of the oral examination is to make the senior thesis more than just an exercise in writing. Nevertheless, the oral examination at the end of the senior year seldom results in failure of the student.

In the sciences the senior thesis is frequently a piece of laboratory research, sometimes something in which the individual faculty member himself is interested. In chemistry a few outstanding students are able to start their senior theses in the middle of the junior year.

It is reported that the theses which are written are sometimes better than average master's essays. The requirement gives the

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student something to look forward to, a goal, a climax of his undergraduate career. Its relation to flexibility is obvious. By setting different levels of expectation for students with different levels of ability, it is possible for even the C student to find his level of independent work and perform adequately. At the same time, the genius can be challenged by a more difficult thesis assignment.

Reed also has independent reading courses in most departments, thus providing another type of flexibility of the independent study type. In an experiment to introduce independent work projects in all courses, the instructor in each course takes a minimum period of 1 week per semester in which special work, group projects, extra papers, conferences, or tutorials are scheduled instead of formal classroom attendance. In some cases the period of out-of-class independent work is as much as 4 weeks a term. The independent work projects in each course are designed both to conserve instruction time and to stimulate student initiative. They also, of course, reflect vigorous faculty interest in experimentation and in improving upon the traditional lecture course that has long been the hallmark of American higher education.

There is a strong feeling on some campuses that there is no such thing as independent study, that programs such as the ones described might well be called "individual" study since they require the assistance, advice, and cooperation of a faculty member. Some administrators believe that the staff requirements for independent study are too expensive to justify. There is also some feeling that independent study is a fad, made attractive in these days of rising enrollment as an easy solution to the problem of bulging classrooms and pending teacher shortages. There is some feeling among segments of college faculties that most students are not mature enough to take advantage of the opportunities of independent study and that nothing can really take the place of the lecture Mondays, Wednesdays, and Fridays at 11. Those who hold this point of view take the position that the place for the undergraduate is in the classroom rather than the library, listening to a lecture rather than reading and writing on his own; that the important role of the college teacher is as a stimulator of young minds rather than as a source of encyclopedic information or an editor of ill-considered, hastily written adolescent prose.

Be that as it may, the critics of independent study may tend to overlook the deficiencies of the traditional lecture system and to minimize the capabilities of a portion of the undergraduate student body. Independent study is as old as colonial times, and today approximately a quarter of the 4-year colleges and universities have

some type of independent study plan.⁹ Although organized independent study programs seem to have touched a relatively small proportion of the total enrollment, the teaching-learning techniques fostered by the independent study type of instruction seem to be an effective way to achieve some measure of flexibility in course structure and class time and to encourage students to greater achievement. However, if independent study is to function well, there must be adequate library facilities available, and teachers must use this instructional system as a result of conviction rather than as a result of administrative decree.

At this point, it is important to consider whether the traditional procedures in college poorly prepare students for independent study or even discourage independent study practices. A freshman comes to college full of enthusiasm, expecting something new and different. His enthusiasm may be dulled by attendance at dull lecture classes, his love of learning diminished if he is forced to follow a slow routinized pace. Perhaps the strategy to try is to start with freshmen and give them independent study assignments at the very beginning, before they get bogged down with routine formal course work. This has been done in some freshman honors programs. To the extent that it can be proved that independent work has merit for freshmen, then it can be applied at all levels.

Honors programs.— Of all the special arrangements to get more flexibility into the curriculum, honors programs appear to have won most general approval and to be the most productive at this time. In fact, honors programs usually include various combinations of the types of flexibility discussed in this booklet, with special emphasis upon service for superior students. In many institutions, certain types of flexibility are used first with honors students and later extended to other students to the extent that they seem appropriate.

Because honors work is confined primarily to superior students, it wins the approval of those critics of independent study who hold that average students are not prepared for independent work. The fact that honors work is now offered in many cases in 4-year programs and sometimes in 3-year programs, rather than traditional upperclass and senior-year programs only, wins the approval of those who favor the equivalent of a multiple track approach with liberal amounts of independent work early in the college career for those who can benefit by it as a basis for developing a continuing momentum in their learning. Many persons view honors work as being excellent for the able student regardless of vocational objective or field of specialization.

⁹ Bonthius, Davis, Drushal, et al., *op. cit.*, p. 28.

One of the most significant developments since 1957 has been the establishment of the Inter-University Committee on the Superior Student, whose newsletter, *The Superior Student*, reports on various honors programs, especially those in publicly supported institutions, where there appears to be an increased interest in operating special programs of study leading to the awarding of bachelor's degrees with honors. The 1960-61 "Honors Inventory," which is a progress report of ICSS and not an exhaustive survey, lists 196 institutions with definite operating programs and 43 with proposed programs. More than half of the operating programs were inaugurated since 1958. Approximately half or more of the institutions in the "Honors Inventory" indicated specific provisions for one or more of the following: independent study, senior thesis or research project, advanced placement, comprehensive examinations, requirements waived, credit by examination.¹⁰

The Inter-University Committee on the Superior Student makes the following recommendations regarding the major features of a full honors program:

1. Identify and select students of higher ability as early as possible. This involves far closer cooperation than has hitherto been the case with high schools and preparatory schools. The proper uses of predictive techniques, past records, entrance tests and interviews, and studies of aptitude, motivation and achievement are now being explored and much experience is being canvassed.
2. Start programs for these students immediately upon admission to the college or university and admit other superior students into these programs whenever they are later identified by their teachers.
3. Make such programs continuous and cumulative through all four years with Honors counseling especially organized and equally continuous.
4. Formulate such programs so that they will relate effectively both to all the college work for the degree and to the area of concentration, departmental specialization, pre-professional or professional training.
5. Make the programs varied and flexible by establishing special courses, ability sections, Honors seminars, colloquia and independent study. Advanced placement and acceleration will serve in a contributory role.
6. Make the Honors program increasingly visible throughout the institution so that it will provide standards and models of excellence for all students and faculty, and contribute to the substitution of an "Honors outlook" for the "grade outlook."
7. Employ methods and materials appropriate to superior students. Experience has shown that this involves:
 - a. Bringing the abler students together in small groups or classes of from 5 to 20 students.
 - b. Using primary sources and original documents rather than textbooks where possible.

¹⁰ "Honors Inventory, 1960-61, Programs and Provisions in Four-Year Colleges and Universities," *The Superior Student*, Jan. 1961. Under the editorship of J. W. Cohen, this newsletter is published monthly during the academic year by the University Honors Information Service of the Inter-University Committee on the Superior Student, University of Colorado, Boulder, Colo.

- c. Less lecturing and predigesting by the faculty of content to be covered; approaching selectively the subject matter to be covered; discouraging passive note taking; encouraging student adventure with ideas in open discussion—the colloquium method with appropriate modification of this method in science and professional schools.
 - d. Supplementing the above with increased independent study, research and summer projects.
 - e. Continuous counseling, in the light of the individual student's development, by teaching personnel, not by full-time nonteaching counselors.
 - f. Giving terminal examinations to test the Honors results.
8. Select faculty qualified to give the best intellectual leadership to able students and fully identified with the aims of the program.
 9. Set aside, where possible, such requirements as are restrictive of a good student's progress, thus increasing his freedom among the alternative facets of the Honors and regular curriculum.
 10. Build in devices of evaluation to test both the means used and the ends sought by an Honors program.
 11. Establish a committee of Honors students to serve as liaison with the Honors Committee or Council. Keep them fully informed on the program and elicit their cooperation in evaluation and development.
 12. Use good students wherever feasible as apprentices in teaching and as research assistants to the best men on the faculty.
 13. Employ Honors students for counseling, orientation and other academic advisory purposes in the general student body.
 14. Establish where possible an Honors center with Honors library, lounge, reading rooms and other appropriate decor.
 15. Assure that such programs will be permanent features of the curriculum and not dependent on temporary or spasmodic dedication of particular faculty men or administrators—in other words, institutionalize such programs, budget them and build thereby a tradition of excellence.

As pointed out by ICSS, the inauguration of an honors program need not await full implementation of all of the above features but can be started where feasible and move in the direction of a full program. Honors programs at the 13 institutions in this study seem representative of the variety of such programs at other institutions.

One of the most interesting interdepartmental honors programs in operation is that offered in humanities at Stanford. A student enrolled in this program takes work in a wide area of the humanities and also completes the major requirements in a single department. He graduates with a major in a departmental subject and with honors in humanities. The program includes courses in humanities in excess of Stanford's general studies requirement, plus certain special seminars, four in the junior year, two senior colloquia, and a senior thesis which is an extended piece of critical

writing and which is considered the most important part of the requirement. More than 100 students annually are enrolled in the honors program in humanities.

Oberlin has reinstituted an honors program to replace its organized independent study arrangement. Departments invite students to undertake honors work in the middle of the junior year, during which they may "try out" for such distinction by doing individual work which is closely supervised and directed. The successful participant in the program receives the A.B. degree with honors in the subject in which he has concentrated.

Each department determines its specific requirements for honors, including whether or not honors students are released from certain course work. An Honors Committee supervises the program and passes on to the faculty the departmental recommendations for the program. Between 10 and 20 percent of the senior class undertake honors work. Through this program and the increased flexibility in the number of required class meetings in general course work of all students, Oberlin hopes not only to preserve all the values of the organized independent study program which it has abandoned, but also to enlarge independent study opportunities for those who can profit most by them.

The College of Literature, Science, and the Arts of the University of Michigan has had a program of departmental honors since the 1920's. In 1957, however, in recognition of the fact that departmental honors provisions came too late in the undergraduate career to stimulate able students to higher achievement, a College Honors Program was established in which freshmen might participate. This was instituted after a year and a half of preparation, committee work, and faculty discussion. Approximately 100 of the brightest freshmen in the college, representing the top 5 percent of the 2,000 new students, were invited to participate. Selection was based on standing in the top tenth of high school class and on College Board and placement test scores. These freshmen were designated honors students, were provided with special counseling, and were enrolled in special sections in some courses. In addition, special courses in some fields were instituted. Most of the group found themselves in two or three honors sections. In psychology and sociology, special discussion sections of the courses were set up for them. Efforts were made to give them individualized attention. In addition, three inter-disciplinary college honors courses, one each in the humanities, the social sciences, and the natural sciences, were made available to the group. At the end of the first term, another 45 students with good records were admitted to the program.

At Michigan, an Honors Council with representation from each department discusses policy questions connected with the college honors program. There is also an executive committee of the Council which has authority to approve the details of operation. On the whole, departments have assigned senior staff and experienced junior staff to teach the special honors sections. A meeting of all instructors involved in teaching honors sections is held in the fall to provide briefing about the program's place in the enrichment of the superior student's education. Instead of remaining in the regular counseling program, the students enrolled in the honors programs receive special counseling by faculty members who volunteer to assist an average of 10 such honors students each.

The College Honors Program does not replace the various departmental honors plans in the junior and senior years, but supplements them at the freshman and sophomore level—students going from the College Honors Program into one of the departmental honors sequences. There were problems initially connected with dovetailing the new operation with what the departments were already doing in the way of honors work. Implicit in the attention given to honors at the University of Michigan is the need to identify promising students early in their collegiate careers. Both faculty and students have been favorable in their reaction to the College Honors Program. The few students who have not done well seemed to have had emotional problems rather than academic deficiencies.

Yale has four kinds of special or honors programs: the scholars of the house plan; small seminars for honors candidates in their major fields of study; sophomore seminars, in the residential colleges, which may be taken in lieu of a regular lecture class; and the directed studies program of general education which is limited to the top quarter of the student body. All of these programs are well supported budgetarily. The directed studies program, for instance, has an annual budget of over \$130,000.

The scholars of the house plan differs most from typical honors programs and Yale takes great pride in this device which permits outstanding seniors to be on their own. They are permitted to audit any course, are freed of class attendance requirements, and have a unique status in the eyes of the faculty. This device appears to work best in the creative arts or in fields cutting across the traditional disciplines.

Included in the cost of the scholars of the house honors program at Yale is one-third of the salary of a director, plus a drawing account which pays for certain scheduled meals of the honors seniors. The faculty member who serves as an adviser to honors candidates also receives a stipend. Although the number of stu-

dents enrolled in this honors program is small, it apparently has considerable influence on the campus.

The general honors program at Yale has several worthwhile features. An honors candidate is assigned to an adviser who meets with him once or twice a week throughout the year. Honors students have at least two seminars. In their senior year, each writes an essay. Some of these have been of such quality that they have been published.

Students in the scholars of the house program meet for dinner every other week, one or two of their number reporting on their progress. There are less frequent dinners for honors students in divisional majors.

In the directed studies programs at Yale, a qualified freshman may choose a carefully designed total program, taught mainly in the seminar method, with opportunity for an unusual amount of independent work. The purpose of the directed studies programs is twofold: (1) to introduce the student to an advanced level of study in his first year and so prepare him as speedily as possible for independent work in upperclass major and honors programs, and (2) to take full advantage of the opportunities for understanding relationships among fields of study which arise from a carefully organized combination of specially designed courses. Implicit in both purposes is the goal of providing a broad and firm basis for later specialization.

For a special limited group of freshmen with exceptional preparation, studies of the first year take the form of interdepartmental studies, emphasizing (by a variety of formal and informal techniques: discussions, essays, tutorials, research projects, laboratory procedures, audiovisual aids, independent work, etc.) the interrelationships of literature and the visual arts; of history and philosophy; of the sciences and mathematics. Freshmen in this group who successfully complete the work of the first year in the program of interdepartmental studies may normally achieve the B.A. in 3 years, if they so desire and make application to the Dean. All directed studies freshmen who complete the work of the first year *with distinction* are eligible for similar consideration.

Freshmen in the programs who wish to continue directed studies in the second year must make application and be approved by the Committee on Curriculum. In the second year, the principle of interdepartmental studies is applied, with special reference to the twentieth century, its values and its problems. In addition, each term one philosophical precept of 20 lectures by distinguished scholars is offered. The precept represents one of the three major

divisions of human activity—the humanities, the social sciences, the natural sciences.

At Hiram College, the 4-year general honors program planned to go into effect in September 1962 has the following provisions: Between 25 and 30 members of each entering class are to be identified as candidates for honors prior to registration. Those students who have attained an average of 2.75 at the end of the freshman year and who continue to be motivated for honors work may continue in the honors program, and others identified as superior students (average of 3.0) may be admitted at the beginning of the sophomore year. Similarly, a 3.00 cumulative average is required at the end of the sophomore year for retention in the honors program and a 3.25 cumulative average qualifies "late bloomers" to enter the program at the beginning of the junior year. A passing grade in the honors colloquium is required for retention in the program at all levels.

Each section of the honors colloquium is to consist of no more than 15 students and will be assigned 3 faculty members who will remain with the group for the entire year to lead discussions of issues and ideas contained in a series of important books. Brief synoptic papers based on the readings will be submitted by each student at each session. Candidates for general honors who have participated in the program for the entire 4 years will be expected to have taken not fewer than six of the honors courses available during the first 3 years in addition to the honors colloquia. All honors courses meet general distributional requirements for graduation. This requirement will be prorated for honors candidates who enter the program late. In the senior year, each honors candidate takes the course in Senior Liberal Studies. Candidates for general honors may be graduated *cum laude* if they have a cumulative grade-point average of 3.25, and those whose senior honors papers are deemed especially worthy by the Honors Board may be graduated with special honors.

At Brandeis University, an honors program is available in each department. A student with a B or better average who becomes a candidate for distinction is obliged in most departments to write a thesis. This usually takes the form of a substantial paper and is the result of an intensive study. The requirements for honors work in the science departments are quite flexible. In some cases graduate level courses are taken by the honors candidate. The faculty encourages promising students to undertake honors work, and 25 to 30 percent of the student body have done so in the past. Those students who do are usually those who have serious graduate school ambitions.

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M.I.T.'s department of mechanical engineering has an honors course which is worth mentioning. At the end of the junior year the top 7 percent of the class, those with the greatest professional promise, are invited to enter the honors course. If they accept, they commit themselves to 2 years of study after which they receive the B.S. and the M.S. degrees simultaneously. In their fourth year, instead of writing a thesis as other students do, they take more mathematics and other course work preparatory to the fifth year, which is primarily engineering science. The student has a great deal of freedom in selecting his courses. In addition, the honors students are invited to dinner meetings at which guest experts in the humanities discuss nonengineering subjects. There has been favorable student reaction.

Admission to the Honors Course extends two privileges to the student: it allows him to combine his senior and master's theses into a single, longer work, and it essentially guarantees admission to graduate school, and thus enables him to plan a coordinated program through the master's degree. The Department of Aeronautics and Astronautics and the Department of Metallurgy have honors courses similar to those in the Department of Mechanical Engineering.

In addition to the undergraduate honors course, the Department of Mechanical Engineering also has the Advanced Undergraduate Program. At the end of the sophomore year, students are selected who, the department feels, would benefit by direct substitution of graduate courses for most of their remaining undergraduate courses. These men are also automatically members of the Honors Course. However, the fact that they have been put into graduate courses earlier in their academic careers means that by the time they acquire a master's degree they are probably a year or more beyond the master's level in terms of course work and are in a unique position to pursue further graduate work.

Since 1951, the College of Letters and Science at U.C.L.A. has administered an honors program for the benefit of its superior students. The chief purpose of this program is to release the exceptionally able student from the pace of study adapted to the average U.C.L.A. undergraduate. Participating students are given library stack privileges and are allowed to meet many of their general degree and major department requirements by (1) taking courses more advanced than the usual ones, including graduate courses taken for undergraduate credit, (2) receiving credit for courses taken by examination without class attendance, (3) taking courses on a "passed-not passed" basis, and (4) engaging in independent study or research. In the spring of 1962, there were

231 students in the program. The departments of English, History, Mathematics, Political Science, and Psychology now have special honors budgetary support and have established departmental honors programs which include small, seminar-type honors classes.

In September 1957, 95 new U.C.L.A. students who scored high in general scholastic aptitude were invited to participate in counseling and testing services offered by the Student Counseling Center. The program has been continued with more restrictive selection processes. Members of these groups are closely followed to see what effect such a counseling, interviewing, and testing program will have on gradepoint average, general adjustment to college work, and progress toward a degree. Students in the program have been given special course and curriculum privileges similar to those for members of the honors program. As of February 1962, 374 students were registered in this program.

Each semester, beginning in September 1957, a number of entering U.C.L.A. freshmen have been designated as entitled to Honors at Entrance. The Admissions Office makes the initial selection based solely on academic performance of the students in high school. The college provides special counseling facilities for these students. In the spring of 1962, 562 students who were selected for Honors at Entrance were in attendance at U.C.L.A. in the College of Letters and Science.

When a student enters a field of concentration at the beginning of his sophomore year at Harvard, he is automatically considered to be an honors candidate unless his field is the natural sciences, architectural sciences, or music, which are not considered well suited to the tutorial method characteristic of the honors program at Harvard. The student meets regularly with his tutor, either alone or in a small group and usually in his own House. Those who qualify at the end of the year to continue as honors candidates go on working with their tutors in their junior and senior years and may receive course reduction and do independent work. In the senior year, each honors candidate writes a thesis for which he has done intensive research under his tutor's supervision. It is estimated that these seniors spend between a quarter and a third of their time on the thesis, which gives them an opportunity to learn what a research problem involves and requires them to make their own analyses. The thesis experience is considered excellent preparation for writing a master's essay or a dissertation. Theses are read by at least two faculty members and, in the case of students considered for the degree summa cum laude and for those whose records are marginal, there is an oral defense of the research paper.

In assessing honors programs, the advantages appear to out-

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weigh the few disadvantages. One important byproduct of an effective honors program is that the individual student receives more personal attention from the faculty than he would in a standard course of study. Some students, however, see themselves in a highly competitive situation and subjected to various anxieties. If additional demands are placed upon them in an honors program, many of them believe they must weigh the risks along with the gains. In the face of this reluctance, some incentive is necessary both in secondary school and college to develop an esprit de corps among individuals of ability and promise.

The University of Michigan in its College Honors Program has endeavored to develop a spirit among its honors freshmen by allotting them a special reading room in the new undergraduate library and by encouraging them to take an active interest in the shaping of the new honors plan. Honors students have much in common. Encouraging them to meet together can serve to foster this needed esprit de corps.

It is equally important that faculty members and administrators express an interest in the student who has embarked on special programs or honors work. The encouragement of the classroom teacher is still the most important ingredient in the success of special plans for the exceptional student.

The senior thesis in an honors program seems to be an especially appropriate requirement for the exceptionally bright undergraduate, particularly for those planning to do graduate work. However, it must be remembered that some capable students can best demonstrate their competence in other ways, that abilities of some may lie in directions other than writing. As a type of flexibility for the superior person, therefore, the senior thesis should not be considered a universal solution to the problem.

In the past, there appear to have been several reasons why more students were not willing to do honors work. Apparently some bright students shied away from the honors opportunities because they were concerned over maintaining as high an academic average in college as possible and feared that the demands of honors work would prevent them from getting high grades. It is possible also that some faculty members have been reluctant to take on additional honors candidates because of the extra work involved. As more and more programs have been established, and as climates appropriate to them have developed, the negative considerations have generally been replaced by genuine interest and commitment, both by students and by faculty. However, some students of high ability report that they feel the concentration required by honors

programs restricts their programs too much, and that they prefer to sample areas and professors they otherwise would have to miss.

Tutorial work.—One curricular variation outside the traditional formal course requirement which is closely related to independent study is the tutorial plan which a number of institutions have adopted to advantage. In a tutorial arrangement the student does considerable reading and writing on his own but under the more or less close supervision of a faculty member. The consultation between student and teacher on an individual basis, or in small groups, is considered extremely valuable by those institutions which have adopted tutorial programs. Although some institutions prefer the colloquium or seminar type of instruction because it is less costly and provides opportunity for group discussion, others prefer tutorial programs for providing a certain type of tailor-made higher education for the serious minded, well motivated student, especially for certain types of specialization. Tutorial programs at the institutions in this study seem typical of those elsewhere.

One type of tutorial arrangement is represented by the system at the University of Michigan where in some departmental honors programs a student is assigned to a tutor in his senior year. The tutor, who has no more than one student whom he carries over and above his regular teaching and research load, usually sees the student once a week in order to help him with his essay and to coordinate the work of his junior and senior years.

At the University of Chicago, the tutorial program is designed for the student who wishes to pursue more thoroughly an individual interest, discovered during his first years in the college, that does not correspond to any one field of academic specialization. Although those in tutorial study usually have good academic records, the program is not designed exclusively for the brilliant student. It is designed rather for the person who wants to follow his own special line of inquiry while developing skills and acquiring perspective in the liberal arts and sciences. Originally, the tutorial program was thought of as a terminal experience, but it has also fulfilled another objective, namely to enable a student to see whether he likes the sort of independent work required in more advanced scholarly pursuits.

Not later than the end of his sophomore year in the college, the tutorial candidate outlines his individualized program in consultation with the Council on Advanced General Studies. The program must include a year of work distributed broadly over the curriculum and a year of work divided in approximately equal proportions among the writing of a bachelor's essay, the taking of courses

having special interest, and reading and other investigations planned in consultation with his tutor, but not subject to direct testing by the Council on Advanced General Studies. The individualized tutorial portion of a student's program may be divided between his last 2 years in the college, or it may be concentrated in the 1st year, depending upon the nature of the special interest and the stage in his career at which the interest becomes fully defined. In any case, the major part of his time in his last year must be devoted to independent work supervised by his tutor.

In the year of work which includes the preparation of the essay, the taking of special courses, and reading and other investigations not subject to direct testing, the latter portion of the program which has been called "planned intellectual leisure" or "the free third," may take the form of additional course work, collateral reading, or participation in some other kind of intellectual activity. Prof. William Bradbury, writing on "the free third" of the tutorial plan has asserted that a principal reason for including it in the program was the belief that it might contribute to the student's habit of choosing intellectually significant leisure activities and of viewing all his activities as offering scope for intelligence. Opinion is divided as to the success of this part of the program.

In addition to writing an essay in his tutorial study at Chicago, the student takes a 1-hour oral examination and a 6-hour written examination which ranges over a wide field and which is constructed for that particular student by the Council on Advanced Tutorial Studies. The tutor normally serves as one of the panel of three who prepare and grade these examinations. Members of this same panel also serve as readers of the bachelor's essay. When he graduates, a tutorial student receives the Bachelor of Arts in Tutorial Studies.

In practice, a student enrolled in the tutorial at the University of Chicago is assigned to a faculty member who agrees to become his tutor. Theoretically, the student spends between 1½ and 2 hours with his tutor every other week. However, since the tutorial activity is engaged in by a faculty member in addition to his regular teaching load, it is done as a labor of love. Even though most instructors consider tutorial work a privilege, there is a limit to what can reasonably be demanded of any staff member. For this reason, some financial and professional recognition of the tutor's contribution would have to become an inherent part of any tutorial program if it were expanded to include a large proportion of the student body.

The tutorial program at the University of Chicago is small and probably should remain so. Some students with graduate ambitions

are deterred from entering it because they fear that taking it may adversely influence their chances for admission to graduate school. Some departments, it is evident, are likely to consider those in the Chicago tutorial program as somewhat deficient in the quantity of specialized preparation they take. As a terminal intellectual experience, particularly for the nonconformist or the student with interests that cut across two or more disciplines, the tutorial plan is probably quite satisfactory. As Bradbury has reported, "those who have served as tutors agree that there is no comparable way of learning about students, and . . . the tutorial system is ideally adapted to achieving the best results of which each student is capable."

While Chicago's tutorial program is limited to a few students, Harvard's program has traditionally been considered a compulsory experience. It was established more than 45 years ago in the belief that tutorial work enables a student to broaden and deepen his understanding of his own field, supplements his course work, gives him an opportunity to pursue topics in his field, and provides an ideal basis for a close individual relationship between teacher and student. At the beginning of his sophomore year, each student is assigned a tutor in his field of concentration unless that field is one of the sciences which is not well suited to the tutorial method. Honors candidates continue working with their tutors in their junior and senior years when they may do considerable independent work in lieu of course requirements.

The initial tutorial experience at Harvard is characterized by complete informality. The degree to which the student makes use of it is left largely to individual initiative. As a result, there is a wide range of quality in the work done. Failure of a tutorial does not prevent a student from getting the degree; on the other hand, the tutorial system provides highly individualized instruction for all who take advantage of it and encourages the student to read and think for himself, to express his own ideas both in writing and orally, and to have his ideas criticized by fellow students and teachers.

At Harvard, all entering students are considered honors candidates, subject to passing qualifying examinations in the field of concentration at the end of the sophomore year. Those who pass these examinations continue as honors candidates and receive additional tutorial work. Another qualifying examination is given at the end of the junior year, and a comprehensive examination covering the whole field of concentration is given in the spring of the senior year. In the senior year, each honors candidate writes

a thesis for which he has done intensive research in his tutorial program.

Apparently, the intention at Harvard is to stimulate interest in honors work by giving all students experience in the tutorial program in order to familiarize them with this type of highly individualized instruction and challenge them to continue in it. Although this approach may widen the gap between honors and nonhonors students, it should result in increased and more purposeful participation in honors work. At present, about 50 percent of the students are honors candidates.

In general, there is one troublesome aspect of the tutorial system which must be considered. The tutor may be of any faculty rank, from teaching fellow to professor, and the expense of this highly individualized instruction for large numbers of students may result in relegation of the bulk of the tutoring to junior staff members. At the same time, good tutoring, because it is a relatively private operation, is not likely to receive as much recognition as outstanding lecturing. For this reason, some of the better or more ambitious teachers may prefer lecture courses to tutoring.

The essay which is written in the tutorial program can best be described as a piece of writing of a liberally educated person addressed to a liberally educated audience. It is not supposed to be a facsimile of a master's essay. There is sometimes a tendency for the student to attempt to do too much in his essay. Frequently, the tutor must curb the scope or extent of the written project. However, this is a minor difficulty, and the fact remains that there is probably no more ideal way in which to learn to write.

Other Types of Programs

Seminar-type programs.—The senior colloquia recently established at Stanford are among the special devices available for seniors. A.B. degree candidates beginning with the class of 1960 are required to take two senior colloquia in fields outside their major. The only exceptions are students entering law or medical school after 3 years and those following interdepartmental honors programs. These colloquia, taught by senior faculty members who select subjects somewhat removed from their own specializations, are kept small in size and demand considerable student participation. They are centered around an important contemporary issue or a major work or writer of abiding significance and designed to stimulate serious thought on a provocative subject through the reading and discussion of challenging and sophisticated materials. They also demand a high level of teaching for the instructor in a

senior colloquium is not able to hide behind dog-eared lecture notes or a facade of lofty objectivity. Essays are required instead of a final examination.

Some of these senior colloquia were originally offered on a voluntary basis, preliminary to establishment of the program. In the colloquia such topics are used as: "Discovery, Invention, and Creation," "Freedom of Speech," "The Making of Decisions," "Man and the State in Modern Drama," "Faith and Scepticism in English Writers," and "Genesis and Geology." Many of the faculty at Stanford apparently regard the colloquium requirement "as the most challenging and significant of the changes introduced" recently at the institution.¹¹

The staff participating in these colloquia are likely to profit as much as the students, since this teaching assignment is a novel intellectual demand on them. It should result in a widening of perspectives, a breaking forth into new frontiers. Only time can determine the extent to which Stanford can meet the pressing staffing demands which this requirement imposes on the faculty and whether staff members will be satisfied with the professional recognition given for participation in this new endeavor.

The senior symposium at Reed is another special program worth mentioning in detail. This course, taken on a voluntary basis, is divided into sections of 12 students each. Each section is taught by two or three professors. The general purpose is the exploration of value problems (social and psychological, moral and religious, scientific and artistic) that confront contemporary man, through the critical analysis of books that take significant positions on these problems. Students read a book a week in a wide range of fields throughout the year. The class meets one evening a week and discussion is at a high level. The course is considered especially valuable for the science majors at Reed, for it gives them an important breadth of study to supplement the depth of their individual specialty. During a typical academic year, the readings ranged from Miller's "Death of a Salesman" and Whitman's "Democratic Vistas" to Niebuhr's "The Meaning of Revelation" and Whitehead's "Concept of Nature." Philosophical works, sociological treatises, fiction, and scientific books are about equally represented. An important criterion for the inclusion of any title on the reading list is its "teachability" and its usefulness for provoking discussion of value problems. The senior symposium is considered one of the major strengths of the Reed program.

¹¹ Robert Hoopes and Hubert Marshall, *The Undergraduate in the University*, A report to the Faculty by the Executive Committee of the Stanford Study of Undergraduate Education, 1954-56. Stanford, Calif., Stanford University Press, 1957. p. 55-56.

In "Undergraduate Seminars" at M.I.T., which were first offered in September 1961, small groups of freshmen are brought into seminar contact with established senior members of the faculty. Lists of topics displaying areas of faculty interest are provided to help the student select a particular seminar from the wide range of topics available. To enhance the informal environment, letter grades have been waived in favor of "pass" or "fail." During the first term, 25 percent of the class had a seminar as an elective; the second term, 31 percent did. Groups were kept small, averaging between 5 and 6 students per seminar. About a third of the groups did some work in the laboratory as part of their investigations. It is expected that these seminars will have a lasting effect on career direction and on the vigor with which the participants later pursue independent work as upperclassmen.

Still another approach can be seen in the preceptorials offered at the University of Chicago. Certain preceptorial classes are given in which a student tackles a special problem based on the materials of a course in general studies. He meets in a seminar and writes an essay in the spring quarter. The essay is the equivalent of between one-half and two-thirds of the comprehensive examination in the course. Preceptorials are limited to those students who have all-round good records.

The single course plan.—Thus far, all the special programs and courses described have fallen into the traditional framework of the academic year in which students carry four or five courses simultaneously. An unusual experiment known as the single course plan has been in operation at Hiram College and is worth examination as a variation in flexibility. At Hiram, until the program was modified in 1958, every student took only one course and in this fashion completed five courses during the year. The single course plan was designed to enable the undergraduate to learn a college subject freed from the distractions of other courses. By concentrating a year's work into 7 weeks, it was thought that the student's learning would be enhanced.

The single course plan has several obvious advantages. If uninterrupted intensive study has any value, the single course plan encourages it to the fullest. Students can enter and leave the institution at more points during the academic year. It appears to be especially useful for the rapid learner on the one hand and for the weak student on the other. It is easier to schedule off-campus trips during the year under the single course plan. Indeed, it is even practicable to plan trips abroad for classes under the single class plan.

Unless an institution has a highly homogeneous enrollment, the disadvantages of the single course plan appear to outweigh its advantages when it is used exclusively. The problems of adjustment to college are intensified under it. Freshmen find it difficult to adjust to the rapid reading pace required in a single course arrangement. It limits the amount of extra work a student can take. The undergraduate cannot very well carry a heavier than normal program. It takes time to learn some skills. Some students cannot master all of the subject matter of a course in 7 weeks. The assimilation is particularly difficult in courses with heavy reading lists. Furthermore, if a student misses a few days because of illness, it is difficult for him to catch up. The plan appears to be expensive administratively.

In 1958, the faculty at Hiram voted to modify the single course plan to give freshmen the traditional type of 5-course program, and limit the single course plan to the other classes. Each term was lengthened to 8 weeks and there are 4 instead of 5 terms in the academic year. The Hiram faculty hopes that this revision will enable it to preserve the best features of both systems. It is expected that the revision should improve the curriculum for the superior students and at the same time assist the weaker ones in getting accustomed to college-level courses. The new plan also should provide for a greater flexibility in the course offering, a greater variation of teaching loads, greater flexibility in student programs, a better system for postponing some subjects, and a reduction in the flow of students in and out of the college during the year. It is likely to make for easier scheduling and for easier adjustment of the majority of students to college.

Television.—Is there any flexibility to be gained through the use of educational television? This is an obvious question in view of the advances which television as a teaching medium has made in recent years. San Francisco State College produces and transmits a TV program for gifted high school students. The high school student takes the same final examination as other students and if he passes receives a certificate which may be turned in for college credit at San Francisco State.

This might be considered a combination of credit by examination and controlled advanced standing. However, San Francisco State College has not been content to let the TV programs be merely lecturing. Weekly meetings of discussion groups have been included both for regularly enrolled students and for the high school seniors, to retain the values of face-to-face contacts between students and an instructor. Discussion leaders for high school students were teachers who had worked in a special seminar with the in-

structor of the course; and in most cases the TV instructor himself met occasionally with the high school group so that he became something more to them than a TV personality.

One of the common denominators of most programs for getting flexibility into the curriculum is deviation from the routinized lecture in an effort to emphasize individualization. Teaching by television is, by and large, lecturing. No matter how skillfully, how entertainingly, how histrionically it is done, it is still lecturing. Critics maintain that teaching by television is the replacement of one lecture device by another, that in terms of flexibility it holds little promise except as an accessory, an accoutrement to learning. Proponents of teaching by television, however, maintain that it can be used to supplement the work learned in class or in the library, that it can extend the audience of good teachers beyond the usual classroom capacity, that it can bring closeup views of demonstrations to hundreds of students simultaneously, and that it can free teaching time for assisting individual students. Like any other form of one-way communication, its widespread use as a substitute for other teaching-learning activities could serve to bring about increased conformity and increased regimentation, unless teachers recognize its limitations and compensate for them.

Other new educational media, such as self-teaching machines and language laboratory equipment, are being introduced to enable each student to proceed at his own pace and to free the teachers' time for assisting individual students. Regardless of the media used, however, the instructional material itself must be appropriate to meet student and program objectives. In the final analysis, then, the degree of flexibility resulting from the use of educational television and other new educational media depends upon the philosophy of the individual institution and the way in which the media are used with other learning activities.

Off-campus study.—Although programs of study abroad have received considerable publicity, other off-campus programs also are growing, both those offered during the regular session and those offered in summer.

A unique experiment in flexibility at Oberlin involves off-campus summer study. This is an area for flexibility which is likely to develop in the future as more colleges and universities expand their summer sessions and move to year-round programs. Departments at Oberlin may now give course credit work which students do on their own away from campus over the summer vacation. The arrangement appears to be more feasible in the language fields than in others. For example, a student may enroll in a French course,

go to France for the summer, and take an examination upon returning to campus the following fall.

At Stanford and Hiram, off-campus study is more formalized, with classes traveling or studying together. For example, Hiram students may have an 8-week winter period of off-campus study in an advanced foreign language course. At Stanford, selected undergraduates may spend two quarters at one of several Stanford study centers overseas, where courses are given under the supervision of resident Stanford faculty members. Programs are designed with special reference to the country in which the center is located, and full academic credit is given.

Another approach to off-campus summer flexibility is seen in the University of Chicago's Humanities I course offered at Aspen, Colo. A year's work in humanities is condensed into a 10-week summer course dealing with music, art, and literature. The course is limited to 20 students, who have access to concerts at Aspen. This arrangement seems popular with the student body.

At the University of Michigan, a program of summer reading has been in effect for several years. Under the auspices of the Honors Council with the cooperation of the Extension Division, students may fulfill a prerequisite or explore a new field and obtain credit upon completion by examination or submission of a thesis. The course of study for summer reading is individually planned by the student's adviser with the approval of the departmental representative.

Curricular flexibility can also be achieved through special off-campus programs for residential students. In the academic year 1961-62, Lafayette College instituted a College Scholars Program. Under this program 25 juniors and seniors, selected on the basis of ability and creative promise and coming from different disciplines in the arts, sciences, and engineering, resided together near the campus and, in addition to carrying normal academic programs, participated in weekly colloquia and seminars at which faculty members, visiting scholars, and the students themselves read and discussed papers on various scholarly subjects.

Many institutions also have off-campus programs in cooperation with business and industry.

Administrative and Staff Problems

In the preceding sections, the reader has considered the rationale for curricular flexibility in terms of its contributions to institutional progress, faculty growth, and student learning, and its

effects upon admissions and attrition. Attention also has been given to examples of flexibility at 13 selected institutions, examples which are representative of the variety of practices at other institutions as well. Some of the administrative and staff problems which are inherent in providing flexibility in student programs in higher education follow :

Budgetary Flexibility

If curricular flexibility is to be provided to any appreciable extent, there is need for another and different type of flexibility, budgetary flexibility. Administrators need financial freedom in order to take effective action to improve the curriculum. Leverage is needed so that additional sections or special programs may be added when the need arises. One way in which budgetary flexibility can be achieved is through the device of a contingency fund. Such a fund could be used to set up a special section of a large lecture class or to provide extra compensation for research assistants in order to secure the services of outstanding faculty members. At Hiram College, for example, the president has a discretionary fund which can be used to secure additional teaching assistants as the need arises.

It is too much to expect overworked, underpaid staff members to undertake extra tutorial work or provide additional instruction for many top students just for the love of it. Curricular flexibility should not be achieved through exploitation of the faculty. If special programs for the gifted students are to be put on a firm footing, there must be adequate compensation for the faculty members who are asked to teach them. At Stanford, for example, the senior colloquia are counted as part of the normal teaching load responsibility. In addition, the Honors Program in Humanities has a financial grounding which is essential to its success. The program buys instructional time from the departments.

On the other hand, at Reed where classes are smaller, the thesis work with students is taken into account in planning the total program for faculty members. In this case, professors carry seniors writing theses under their direction as part of their regular teaching load. This work varies in its incidence from department to department, from man to man, and from year to year, so that it cannot generally be calculated in advance. Apparently most professors regard the thesis as one of the most successful aspects of the Reed program and accept responsibility for this work as part of their regular load.

In the final analysis, it is sufficient to point out that both financial support and professional recognition are essential for the success of special programs, whether these programs require additional staff or additional service by regular staff.

Importance of Guidance

One important adjunct to curricular flexibility is an adequate guidance system, one which gives sufficient time and attention to the above-average student as well as to the marginal one. At many institutions, the lowest third of the class gets guidance attention from faculty and administration because it is relatively easy to justify remedial programs or special services to salvage the weak, and results can be evaluated in terms of prevention of failure or dropping out. Frequently, much more effort is expended on the marginal students than on those with ability who, while doing satisfactory work, are nevertheless not working up to capacity. Because the fruits of one's labors with students of high ability are not always readily discernible, some institutions seem reluctant to spend money on guidance for the gifted, and individual faculty members leave above-average students to their own devices in the press of demands from marginal students whose needs are more obviously urgent.

One weakness of many advisory programs is the large number of students a faculty member is assigned to counsel. At the University of Michigan, faculty counselors are released from a third of their teaching or department duties and assigned from 150 to 180 students for freshman and sophomore counseling. The value of guidance for the gifted is perhaps best seen at Reed where the student gets more attention from faculty members than is possible at many larger institutions. Harvard strives to get a certain amount of flexibility into its freshman advisory system by assigning the best students to the best advisers. However, the turnover among advisers at Harvard and elsewhere is inordinately high and such turnover is another weakness evident in most advisory programs.

Recently U.C.L.A. established a special program for identifying and guiding exceptional students in the freshman class. All entering students were given some 14 hours of aptitude, achievement, and personality testing. As a result, approximately 10 percent of the freshman class, whose high school records had not revealed it, were uncovered as possessing unusual abilities, placing them in the top half of 1 percent nationally. This gifted group was assigned a

special counselor who gave each person an hour conference during which the test findings were discussed. After that, additional counseling was available to the student when and if desired. The group also were encouraged to accelerate or to take more challenging courses than they ordinarily would have done. In addition, the college planned a continuous research program with this group in order to ensure that they get the most out of their education. The U.C.L.A. experiment points up the fact that abilities of many capable youth are not revealed by their high school records, either because some students have not been challenged to demonstrate their proficiencies or because some high school records do not provide adequate evaluations of abilities.

The fact remains that attention to guidance in many institutions lags considerably behind attention to instructional programs, that many faculty members who are quite proficient in their subject areas have neither the training nor the inclination to undertake extensive guidance of students, and that the diversity of student characteristics demands more than perfunctory attention to the guidance function in programs purporting to offer flexibility in rate or depth of student learning.

The Teacher's Role

Little has been said thus far about the crucial role which the individual teacher plays in providing flexibility in the curriculum. Where classes are small, the instructor can frequently put the level of work as high as the abilities of the students warrant. In a small class the instructor is more easily able to gage the effectiveness of his presentation than he is in a large lecture class. Teaching by a discussion method with provision for independent study may enable the instructor to move a class ahead as rapidly as they are able to go, to take them as deep in a subject as they are ready to be taken.

The effectiveness of the classroom teacher at an institution such as Reed is eloquent testimony on behalf of small classes. The fundamental teaching method at Reed is the conference approach. Classes are kept small enough to allow each student to get the optimum individual attention. Passivity is avoided. Participation and involvement are at a premium. Reed maintains that a good conference can go far to stimulate a student to work to greater heights, that it can produce an identity with and commitment to an intellectual discipline which even the most eloquent lecturer cannot accomplish. In the long run, a small class discussion in the hands of a capable

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teacher may be the most productive yet most elusive type of flexibility obtainable.

Actually, regardless of the teaching-learning techniques advocated by an institution, the degree of flexibility in rate and depth of each student's learning is determined largely by the philosophy and practices of the individual teachers with whom he has his work.

Conclusion

In the final analysis, flexibility depends much more on the willingness, personality, and interest of the faculty than on the formal requirements and procedures of the institution. In other words, men are more important than methods. Much depends on the environment, the atmosphere of the campus, the quality of instruction, and the student body. Little is likely to be accomplished by artificial devices.

As a result of visits to the 13 institutions represented in this study, and the study of practices at other institutions, the following conclusions seem appropriate:

1. Advanced placement, independent study, and honors programs seem to be the most promising types of curricular flexibility at this time. They should be encouraged, extended, and given adequate financial support.
2. Guidance, especially for gifted undergraduates, needs to be expanded and improved.
3. Library facilities and their use play an important part in facilitating the effective operation of special curricular programs.
4. The traditional attitude toward academic bookkeeping should be re-appraised and probably revised. There is great need to eliminate the ruts in higher educational procedures, so that individual students are not required to conform to group rates of progress and group curricular patterns. Departmental autonomy, when it is tradition-bound, should be reduced.
5. Undergraduates should be permitted, encouraged, and required to assume greater responsibility for their own education.

At the same time, a certain amount of constructive criticism may be healthy to the higher educational scene. Actual practices in providing flexibility seem to be lagging behind lip-service to the

philosophy on which such practices are based. The programs which are really challenging students to produce at their maximum touch a minority of students. Too many collegians are "coasting." Too many are limping; attention is focused almost entirely on the average. Too many faculties are too overworked and underpaid to provide that extra instruction, inspiration, and guidance which the serious students on our college campuses need to have.

Let us conclude with the same question with which we started: Why Flexibility? Is it worth the extra expense, time, and effort? Do today's undergraduates deserve more of an education than they are getting? Perhaps not all of them. But every campus has a large proportion of serious students who deserve the best we can give them. For this group, flexibility seems to be the answer—flexibility which permits escape from the Procrustean textbook to a variety of reading materials, opportunity for choices among alternatives, and search for materials and answers on one's own.

These, then, have been the random observations of a traveler who chose to visit some of the best colleges and universities in the United States in 1958 and who has since had time to evaluate the programs observed. One returns from such a trip impressed by the sense of ferment on college campuses. Promising experiments are being tried; fascinating ideas are being expressed. Educators are wrestling with the problem of curricular improvement; they are seeking to push out the frontiers and to make higher education more effective than it has been. An increasing number of them are concerned with extending flexibility in the curriculum so that all students are encouraged to work up to capacity, so that the educational pattern has relevance for the individual's abilities, interests, and objectives.

So long as America is in need of manpower trained in the sciences, in industry, in the arts, and in world affairs, institutions have an obligation to provide programs with sufficient flexibility in the rate of progress and depth of study to permit each individual student to develop to his maximum capacity the qualities needed for scientific and social progress. In a nation rich in natural resources and intellectual potential and entrusted with major responsibilities for world betterment, we can and must afford to expend whatever money and effort are necessary for maximum development of individual human resources.

NEW DIMENSIONS
in Higher Education

Number 11

Talent and Tomorrow's Teachers
THE HONORS APPROACH

A statement based upon the verbatim transcript of proceedings of an April 1962 conference of the Inter-University Committee on the Superior Student; J. W. Cohen, Director, and N. D. Kurland, Associate Director, ICSS

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New Dimensions in Higher Education

WINSLOW R. HATCH, *Coordinator of the Series and Director, Clearinghouse of Studies on Higher Education*

THE SERIES *New Dimensions in Higher Education* deals with developments of significance to colleges and universities and all persons interested in improving the quality of higher education. These developments are examined one at a time but in the context of a series. Each number is intended, within the bounds of reasonable brevity, to provide the hurried reader with a summary and interpretation of a substantial body of information. To the extent feasible, detailed studies are cited, needed additional research is identified, and recommendations are suggested. Background materials include reports on file in the Office of Education's Clearinghouse of Studies on Higher Education, published literature in the field, and the counsel of educators who are recognized authorities in the subjects treated. In order that the series may be increasingly useful to colleges and universities, reader reactions are welcome.

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III

Foreword

THE HONORS approach is characterized by rigorous inquiry involving students and teachers with exceptional intellectual commitments and ability. This climate of learning encompasses the excitement of bright minds in contact with bright minds, working on matters of importance, generally in small groups and often making use of independent study. It encourages maximum development of exceptional ability and talent wherever it can be identified—at all levels of the educational continuum and among the socially disadvantaged as well as among those more fortunate. As a result of this approach to learning, a renaissance in American education may be underway.

This issue of the New Dimensions Series explores the potentialities of honors programs and of the honors approach in relation to high ability students who are preparing to teach. While there is no claim that honors is the only approach to the preparation of these teachers, it is recognized that honors programs in general are distinguished by the breadth, depth, and sense of inquiry which are considered important elements in working successfully with students whose intellectual and creative talents transcend the average. In programs of teacher preparation, therefore, the honors approach to learning may have a leavening effect which reaches the whole educational enterprise and helps to lead each individual, of whatever capacity, to seek the maximum development of his talents.

Programs specifically identified as *honors programs* have been in use in colleges and universities for more than 30 years. Since 1958, the body of theory and practice relative to these programs has been clarified and publicized through the efforts of the Inter-University Committee on the Superior Student. In April 1962, under the sponsorship of ICSS, a national conference on *Honors and the Preparation of Teachers* was convened at the University of Wisconsin to explore the significance of honors and the honors approach in teacher preparation. At the suggestion of former Commissioner Sterling M. McMurrin, the proceedings of that conference were submitted to the Office of Education by Joseph W. Cohen, Director, and N. D. Kurland, who was then Associate Director of ICSS.



From the verbatim report of the Wisconsin conference, this publication treats the interrelationships between honors in the arts and sciences and honors in the professional education of students who are preparing to teach. It describes some of the problems encountered in connection with the establishment, operation, and evaluation of honors programs, and suggests what the impact of these programs may be upon the quality emphasis in individual schools and hence upon the quality thrust in education as a whole.

The Office of Education has been pleased to cooperate in the preparation of this statement. The proceedings transcript on which it is based presents the views and arguments of a distinguished group of leaders in American education. Furthermore, the Office is particularly indebted to Professor Cohen and others of ICSS for providing introductory material, for substantial analysis of the verbatim proceedings, and for review of the final manuscript for accuracy of interpretation.

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I. Introduction

Quite certainly the key to the quality of our entire educational enterprise is the intellectual strength of our teachers, their grasp of the aims and purposes of education, the quality of their own liberal education, and their competence in the subjects they teach. Without question the establishment of effective honors programs for selected potential teachers can have far-reaching consequences for our schools.—Sterling M. McMurrin, former *Commissioner of Education*¹

The honors approach to learning presumes not only an exceptional intellectual commitment on the part of the student but also the capacity, motivation, and sense of inquiry needed to pursue that commitment. This publication presents an analytical summary of theories and problems of the honors approach in relation to programs for superior students who plan to enter the teaching profession. It is based on proceedings of the conference on *Honors and the Preparation of Teachers*, sponsored by the Inter-University Committee on the Superior Student, April 8-10, 1962, at the University of Wisconsin. This was the sixth major ICSS conference² and the first to concentrate on the problems of honors in a single professional field. It was generated out of a growing conviction that an honors approach to teacher preparation could better attract, hold, and prepare talented future teachers. There was also a conviction that an approach by way of honors could provide an extremely fertile basis for effective cooperation in common concerns between the professional discipline of education and the subject-matter disciplines of the liberal arts and sciences.

The transcript of proceedings included a verbatim record of 2 days of intensive plenary-session discussion by some 70 conferees, well divided between education and the liberal arts and representing 44

¹ Statement prepared for this publication.

² Preceding conferences: Southern, November 1958 (University of Louisville); Eastern, June 1959 (University of Michigan); Negro, February 1960 (Southern University); Western, April 1960 (University of California); and Honors Directors, June 1961 (University of Colorado). The original conference out of which the ICSS was launched was held at the University of Colorado in June 1957 with the help of a grant from the Rockefeller Foundation. A grant from the Carnegie Corporation made possible the subsequent series of five conferences, and the Edgar Stern Family provided a grant for the conference on which this report is based.

institutions and 7 national educational associations. A list of participants and their respective affiliations is given in appendix C.

The conference began with addresses by Edward W. Strong, Chancellor, University of California at Berkeley, and James L. Jarrett, President, Western Washington State College, representing, respectively, a comprehensive university and an institution which is still chiefly concerned with teacher education. After a day of panels and discussions, two further approaches were presented by Lindley Stiles, Dean, School of Education, University of Wisconsin, and J. W. Maucker, president, State College of Iowa. All of these addresses are included in appendix A of this report.

In the discussion periods, the conferees examined many theoretical and practical problems germane to the themes.³ Out of the complete ICSS transcript, this report distills what seems to be the gist of the points of view of educators directly concerned with the preparation of teachers. There has been a deliberate effort to retain as much as possible of the actual verbatim proceedings, although materials have been re-arranged in a form useful for the reader confronting the problems of honors in education for the first time. Unless otherwise noted, quotations immediately following section heads are taken directly from the proceedings transcript. To avoid innumerable references, no attempt has been made to identify individual conferees responsible for other statements or ideas. The reader interested in the degree of conformity of the text to the proceedings transcript is invited to compare points in appendixes A and B with deliberate treatment of these points elsewhere in the report.

The basic recommendation of the Wisconsin conference was that institutions which prepare teachers should inaugurate honors programs for superior students. Coming from an ICSS conference, this conclusion was not surprising. It followed an exciting, effective, and spirited exchange of ideas among representatives of professional education and those of the arts and sciences. Many problems, to be sure, remain unresolved; but for each of them new avenues for cooperation were opened. More than anything else, the conference was directed toward factors related to the planning and implementation of programs that attract and prepare those who are the best qualified for

³ Many of the themes having to do with honors programs generally have been treated in issues of the ICSS newsletter, *The Superior Student*. Back copies of most issues are available for a nominal charge from the ICSS office, University of Colorado, Boulder, Colo., and back issues are also available on microfilm from university microfilms. See the index issues (February 1961 and May-June 1962) for relevant articles under the following categories: Advanced Placement, Administration, Advising, All-University Programs, Budgeting, Education, Freshman Year—Beginning in, Freshman Programs and Courses, General Programs, General v. Departmental Honors, High School-College Liaison, Interdisciplinary Courses and Programs, Professional Schools, Research and Evaluation, Selection, Seminars and Colloquia, Teaching, Theory of Honors, and Women in Honors.

teaching to become the best kind of teachers. To the extent that "nuclei of quality," recommended by J. W. Cohen, Director of ICSS, can be developed in teacher preparation, models may be provided for upgrading the entire professional sequence for teachers, thereby providing an opportunity for every student to make the progress of which he is capable. This could lead ultimately not only to better programs for superior students but also to the improvement of educational experiences for all students.

There is no single pattern characteristic of all honors programs. An institution starts one where feasible and then moves in the direction of a full program in terms of its interpretation of needs and its ability to implement plans. The ICSS, which has been largely responsible for development of the body of theory and practice relative to these programs, makes the following recommendations regarding the major features of a full honors program:

1. Identify and select students of higher ability as early as possible. This involves far closer cooperation than has hitherto been the case with high schools and preparatory schools. The proper uses of predictive techniques, past records, entrance tests and interviews, and studies of aptitude, motivation, and achievement are now being explored and much experience is being canvassed.
2. Start programs for these students immediately upon admission to the college or university and admit other superior students into these programs whenever they are later identified by their teachers.
3. Make such programs continuous and cumulative through all 4 years, with honors counseling especially organized and equally continuous.
4. Formulate such programs so that they will relate effectively both to all the college work for the degree and to the area of concentration, departmental specialization, preprofessional or professional training.
5. Make the progress varied and flexible by establishing special courses, ability sections, honors seminars, colloquia and independent study. Advanced placement and acceleration will serve in a contributory role.
6. Make the honors program increasingly visible throughout the institution so that it will provide standards and models of excellence for all students and faculty, and contribute to the substitution of an "honors outlook" for the "grade outlook."
7. Employ methods and materials appropriate to superior students. Experience has shown that this involves:
 - a. Bringing the abler students together in small groups or classes of from 5 to 20 students.
 - b. Using primary sources and original documents rather than textbooks where possible.
 - c. Less lecturing and predigesting by the faculty of content to be covered; approaching selectively the subject matter to be covered;

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discouraging passive note taking ; encouraging student adventure with ideas in open discussion—the colloquium method with appropriate modification of this method in science and professional schools.

- d. Supplementing the above with increased independent study, research and summer projects.
 - e. Continuous counseling, in the light of the individual student's development, by teaching personnel, not by full-time nonteaching counselors.
 - f. Giving terminal examinations to test the honors results.
8. Select faculty qualified to give the best intellectual leadership to able students and fully identified with the aims of the program.
 9. Set aside, where possible, such requirements as are restrictive of a good student's progress, thus increasing his freedom among the alternative facets of the honors and regular curriculum.
 10. Build in devices of evaluation to test both the means used and the ends sought by an honors program.
 11. Establish a committee of honors students to serve as liaison with the honors committee or council. Keep them fully informed on the program and elicit their cooperation in evaluation and development.
 12. Use good students wherever feasible as apprentices in teaching and as research assistants to outstanding faculty members.
 13. Employ honors students for counseling, orientation and other academic advisory purposes in the general student body.
 14. Establish where possible an honors center with honors library, lounge, reading rooms and other appropriate decor.
 15. Assure that such programs will be permanent features of the curriculum and not dependent on temporary or spasmodic dedication of particular faculty or administrators—in other words, institutionalize such programs, budget them and build thereby a tradition of excellence.

II. Honors—Their Place in the Quest for Quality

The most talented students are capable of the best work. The sooner they are identified and provided with opportunity to make ample use of their talents as they mature, the more they will encompass and master in the years they spend in formal education. It is the aim of honors work to enable the best students to do the best of which they are capable.

. . .

Honors work is the work of inquiry to which teacher and student contribute. It fosters and develops skill in examining the answers given to questions by demanding evidence and reasons. It leads to examinations of the questions themselves and of the kinds of answers that are relevant to a scientific question, a moral or aesthetic question, a question about validity of reasoning, a question about truth or falsity of a proposition, a question about definition as distinguished from a question about causation, a question about facts and a question about interpretation of facts.—Edward W. Strong, *University of California*

Capabilities of good students may differ in degree and, in extreme cases, in kind. So, too, the intellectual fare of students in an honors program differs in degree and at times in kind from the fare of those who fall short of qualifying for honors. While there may be general agreement on the purpose of honors work, the ways and means of effectuating this purpose vary widely among institutions and among departments within institutions. In the *Honors Inventory, 1960-61*, a progress report and not an exhaustive survey, the Inter-University Committee on the Superior Student lists programs and provisions in 4-year colleges and universities.¹

¹ *The Superior Student*, the newsletter of the Inter-University Committee on the Superior Student, entire issue of January 1961. Included in the directory are 198 institutions with definite operating programs and 43 with proposed programs. The rapid spread of these programs in recent years is indicated by the fact that more than half of the operating programs were inaugurated since 1958. Many more programs have been started since January 1961.

In attempting to catalog the ways and means used by institutions to carry out their honors programs, the questionnaire used by ICSS listed and supplied explanations for the following specific provisions: Advising, student committee, advanced placement, credit by examination, requirements waived, special sections, special courses, theme groups, seminars, colloquia, independent study, tutorials, research projects, in-course projects, summer projects, comprehensive examinations, outside examiners, thesis, study abroad for honors credit, special privileges, honors center, graduate work for undergraduates, brochure, publications, and evaluation. A space was provided for giving details about additional provisions and future plans. An analysis of the inventory shows no set pattern, but half or more of the institutions indicated specific provisions for one or more of the following: independent study, senior thesis or research project, advanced placement, comprehensive examinations, requirements waived, and credit by examination. Some institutions indicated that their honors programs included virtually every provision on the list.

From a study of the complete file of *The Superior Student*, it seems safe to assume that in a given institution—indeed, even in a given course—the approach to honors work depends upon relative emphasis upon depth or breadth of study, acceleration or enrichment, knowledge or performance, purpose or level of experience, or combinations of these, according to the philosophy and resources of the particular institution. In other words, although the purpose of honors programs in general may be to provide the best possible education for the best students, the ways and means may be a compromise between what is desirable and what is feasible within the resources of the institution.

An honors program rests on qualitative discriminations not only in selection of particular modes of work but also in selection of students and in selection of faculty. Simple ability grouping is not enough for a true honors program if it does not differentiate the highly gifted student from the above average student. Only as this selection is made does one arrive at the qualitative discrimination that sets off doing better with better students from doing the best with the best, the conception of honors to which many colleges and universities adhere in their honors programs. In any institution, there still is the problem of what to do in those cases where individual teachers identify students who have exceptional depth, independent intellectuality, and creativity, but who have not amassed the grade-point average recommended for honors work because they have let grades fall where they may while devoting time and effort to study that interests them most.

Whatever the position in which an institution finds itself in determining the capable students to whom it can properly devote special

attention, effective honors work calls for teachers who have equipped themselves to challenge the minds of these students and to meet the challenge they present. If there is an honors program at the liberal arts college, the school of education should capitalize on it and arrange for students in the program to continue in honors, or else expect dissatisfaction from such students who choose careers in education.

There is another reason why schools of education should have honors programs, perhaps even if there is no such program in general education. Honors work that calls fully upon the intellectual resources of the student of exceptional ability develops in him a fuller capability to repeat the process with his students. Furthermore, it is reasonable to expect that experience with honors courses will strengthen interest of superior students in teaching, since honors work is the antithesis of a routine performance of routine chores. If those engaged in teacher preparation have not brought their own best qualified students into work of honors quality, they will not be furnishing a cadre of teachers who will be able to carry the conception of work of honors quality into the schools.

With the best students and the best teachers, breadth and depth of inquiry will thrive best. However, although such inquiry ought never to be conceived as something reserved for honors work or peculiar to it, it ought always to be characteristic of the work of students and teachers in honors programs. In the continuum of the educables and the educators, there is no point at which there is justification for treating learning as merely a matter of rote in turning out readymade answers to stock questions. Learning requires application and exacting practice. The ablest student may perform easily many tasks with which others have to struggle. On the other hand, a less gifted student, through greater labor, may accomplish more than his more gifted companion. If the gifted student fails to come up to expectations, the fault may lie within himself; on the other hand, it may lie with the school or with the teacher if too little was offered or demanded.

While advocating and furnishing equality of opportunity, our colleges and universities must also recognize inequality of capability and help the ablest students to advance as fast and as far as they can. There is no real incompatibility between the end of educating the many and that of providing the best for the best. The press of numbers need not be at the expense of quality, and we cannot afford to sacrifice one to the other.

III. Honors and the Preparation of Teachers

Significance for Teacher Education

The importance of honors programs for teachers derives from the fact that most people tend to teach as they have been taught. Thus the challenge to us is to give students the kind of experiences in college which we hope they will transmit to their students in the schools.—J Ned Bryan, *U.S. Office of Education*

Honors programs specifically designed for prospective teachers can become invitations to teaching to the most outstanding young people, those with the keenest minds and those with the greatest sense of commitment. They can also lead to improvement of teacher education itself.

The objective of honors programs for prospective teachers is twofold: first, to provide work that is intellectually exciting and challenging to bright students; and, second, to produce teachers who are personally and professionally prepared to carry the challenge of excellence into their own classrooms. Honors programs have to produce results, both while the student is in school and after he graduates.

To attain this twofold objective, those who would build honors programs for teachers must take a long look at the total honors program, not only at the program in education. To provide proper synchronization requires a high degree of cooperation on a : institution-wide basis between professors of education and professors in other schools, particularly in the liberal arts. Fortunately, there are rapid strides in moving toward this kind of cooperation in many institutions. Within the last 5 years, over 200 institutions have introduced honors courses. Already about 20 of these are doing something about honors programs for teachers. This means that colleges and universities are beginning to add the dimension of honors to the pedagogical phase of teacher education.

Examples of the practical problems encountered by institutions already trying to involve prospective teachers in honors opportunities give some insight into the highly organic and creative way in which honors programs develop and grow. For example, at the University of Wisconsin,¹ where with the addition of the senior year in September 1962, the honors program in the arts college will be complete, there is a rather unusual interlocking faculty arrangement between the College of Arts and Sciences and the School of Education and an extremely strong sense of departmental autonomy and independence. This sort of arrangement could result in flexibility or anarchy, depending on how well groups work together on various mutual problems. For those professional schools that are to any substantial degree linked to an arts college, the center of gravity of honors work is in the arts college. In fact, most schools require a student to do honors work in the arts college before he is eligible for honors in the professional college. Once in the School of Education, the secondary major's honors work in his academic major is identical insofar as possible with the honors curriculum of an arts student in the same subject. The fact that the faculty of the College of Arts and Sciences is also part of the faculty of the School of Education is considered an enormous advantage.

The honors program in the School of Education at Wisconsin is considered a pilot study that will help develop more adequate ways of handling superior students. Increasing attention has been given to the recruitment of superior faculty members in education. Last year, the first honors course—a course in the area of educational psychology—was in operation. By 1962–63, a number of additional courses are expected to be in operation in the professional sequence.

At the University of Illinois,² a study committee of the University Senate, set up in 1957, worked for a year to prepare a written constitution for an all-university honors program. It was based on the assumption that good students are to be found in every division; each of the major colleges at Illinois now has, in some form, a working honors program. Each year, in the all-university honors program, about 30 out of 250 honors freshmen are in the teacher-education program.

Within the College of Education at Illinois, there is no consensus about whether the best approach should be (1) primarily independent

¹ See the following articles and notes in *The Superior Student*. "Distinctive Features of the University of Wisconsin Honors Program," May-June 1960, p. 16; "Notes," March 1961, p. 29, and January-February 1962, p. 29.

² See the following articles in *The Superior Student*: "All-University Honors Program," January 1960, p. 9; "Two University of Illinois Professional School Programs," May-June 1960, p. 13; "All-University Honors Program," November-December 1961, p. 2; and "Student Attitudes Toward the Honors Program," January-February 1962, p. 11.

study with perhaps the preparation of a major research paper or thesis; (2) specially designated sections of undergraduate courses which cover the same ground that is covered in all sections but in more detail; (3) special sections of regular courses which have more freedom and do not necessarily cover the same material as other sections;³ or (4) special honors courses which differ entirely from regular courses. At this point, the honors program in education is relatively new; and no definite approaches have been established. There is agreement, however, that the courses should be more analytical, the students more critical and inclined to go to original rather than secondary sources, and the instructors more inclined to help the students develop sophistication in terms of the cognitive structure of the field, its reigning ideas, and general theory.

From the very beginning of the honors program at the University of Colorado⁴ (1930), education and the arts and sciences have been involved in close cooperation. The founders agreed that all students—education students included—ought to have a strong liberal arts education. They stressed and fought for an honors approach, both in general studies and in the departments, the lower division work fortifying the upper division departmental requirements and the departmental work in the upper division influencing the work undertaken in the lower division. This emphasis has continued in spite of the fact that 3 years ago the Department of Education became a separate school which students enter as juniors. Many education students, however, continue to take liberal arts honors courses along with students majoring in other fields. They also have an opportunity to meet together in the honors center. A member of the School of Education faculty has nearly always been on the College of Arts and Sciences Honors Council.

At Colorado, it has been gratifying to note over the past few years that overall grade-point averages for students who are preparing to teach are at the top rather than the bottom of the heap, as some critics insist is the usual case. Emphasis is placed on the general, all-university nature of honors. The focus lies outside the School of Education in the broader framework of the university rather than within the professional sequence itself. Actually, the approach is largely that of the involvement of interested faculty of the School of Education in work with the total honors program.

³One such course is organized in terms of major problems within the area of educational psychology. Faculty members engaged in research on these problems are invited to involve students in various aspects of the studies.

⁴See the following articles and note in *The Superior Student*: "Colloquia at the University of Colorado," March 1961, p. 16; "Freshman Engineering Program," May 1961, p. 13; "Notes," November 1960, p. 24. See also "Honors at the University of Colorado," a mimeographed manual on the program.

Honors work in education at Colorado is also considered a means of introducing noneducation students to the nature, structure, challenge, and issues of American education. This is a somewhat different approach from that usually found in schools of education and may come to have special significance in general education programs. These courses serve two kinds of students: those who think they might like to become teachers but are not sure, and those already committed to a career who want to explore the whole reality of education, its place in the pluralistic American culture, the problem of academic freedom, and the structure and finances of education.

At the University of Oregon,⁵ the aim of the Honors College is the creation of a distinctive and separate honors environment. It has its own faculty and administration and sets its own requirements. The philosophy of the Honors College is that honors students should have a different lower division program from regular students and should also be able to involve themselves in independent work to the extent they wish. During the first 2 years, most of the honors student's time is devoted to required core courses in three curricular areas. Actually, through reading in the summer, a student may prepare himself for the comprehensive examination in any of the core courses and receive credit without being enrolled in the course. Systematic counseling is characteristic of all 4 years.

In the last 2 years, honors work is provided by the departments and professional schools in cooperation with the Honors College. There is no attempt on the part of the Honors College to tell the various schools and departments what kind of program they must have, but established workable arrangements provide for independent work of some kind, and more experience in writing than would normally be expected, usually including an honors thesis. There must also be a final oral examination. In addition, there are upper division colloquia which bring together 6 to 10 students from the various disciplines to discuss problems outside their major fields. One objective of the program is to bring the students into the community of superior students of the whole university so that they identify themselves with each other. For this purpose, an Honors College Center is provided where they can meet informally or study. Careful evaluation studies of the program have been inaugurated.

The Western Washington State College,⁶ only recently changed from a teachers college to a general college, does not have the problems of communication between arts and education faculties faced by

⁵ See the following article and note in *The Superior Student*: "The Honors College," March 1960, p. 7; and "Notes," March 1961, p. 31.

⁶ "Notes," *The Superior Student*, November 1960, p. 24, and November-December 1961, p. 20.

some universities. As part of the cooperative endeavor of the system, prospective teachers must be approved both by the subject-matter departments and by the professional education staff, and an effort has been made to obtain in all departments faculty who, besides being thoroughly competent in their fields, have had some experience in the public schools. At present, interdisciplinary honors colloquia are required for all honors students in education. Stress is placed on the careful reading of major documents of culture. There is a senior thesis with a tutorial.

Further, at Western Washington State emphasis is given to motivating the extremely capable but sometimes underachieving prospective teacher. Officials say this requires an attitude of some permissiveness in initial selection, involves some risks, and is discouraging at times; however, the practice is expected to result in the salvage of some who would perhaps have had quite undistinguished careers had it not been for the program.

The progress reported in the preceding examples is encouraging but unfortunately not yet typical of teacher education across the Nation. The fault, however, does not lie entirely with pedagogical preparation. There are also weaknesses which result from other factors. For example, it is not necessary for teachers to be practitioners of the disciplines they profess—the composition teacher does not have to be a writer; the history teacher, a historian; the science teacher, a scientist; and the foreign language teacher, an ambassador of the culture he represents. Prospective teachers should, nevertheless, be given a solid foundation in the subjects they are to teach, as well as the liberal background that will make them educated individuals. The need is one of both breadth and depth.

The problem seems most pronounced for students preparing to teach in elementary schools. Potential teachers who yearn for the excitement of rigorous college-level courses may be repelled from teaching by academic programs too close to the grade level for which they are being prepared. Familiarity with skills, subject matter, and activities appropriate for elementary schools—a necessity for successful teaching, to be sure—might be allocated to the internship, when prospective teachers are giving full time to learning how to teach.

To deny honors experiences to bright students as a price for becoming teachers simply because some teacher education programs in the past have done so is to risk driving out of the profession those able people who might be the most effective leaders in education in the future. On the other hand, to provide honors programs for prospective teachers shows some promise of attracting superior students into teaching and of giving them the thrill as well as the headaches of applying the processes by which knowledge is gained. In the long

run, it may provide models for upgrading the entire professional sequence for teachers. In fact, it may make better teachers of those who can stand the pace.

Honors in Professional Education Programs

If an honors program has already been instituted on a campus and if participation, continuation, or extension of the program is being sought by or within a school of education, then the motif should be more of the same work of inquiry. To attract honors students, a school of education must offer them a like kind of intellectual engagement. An easy but fatal mistake would be made if one substituted exposition of honors work for the doing of honors work. Exposition or theory courses about honors might or might not be of the kind and calibre deserving the name of honors, depending upon their substance and the quality of work undertaken by students.—Edward W. Strong, *University of California*

As the work in any particular field of study reaches an advanced level, it takes on a professional character. There is a certain continuity of emphasis as study begun as an undergraduate becomes more thorough and specialized during the graduate years. There is a movement from breadth to depth, a movement toward concentration for the sake of developing mastery. The honors student moves earlier into the kind and calibre of work which formerly characterized the final stages of study.

The situation does not seem to be radically different, whether the honors work is in general education or in a professional school. Participation in honors work, whether it be in a campus-wide honors program, or in a program developed within the professional school, or in some combination, is animated by common purposes, even though somewhat different emphases are expected to be lodged in the particular disciplinary clusterings of students. The difference in emphasis does not necessarily constitute a weakness and may indeed be a strength, especially in the upper undergraduate years.

The tasks of preparing teachers have generally been viewed as a threefold development: Competence in subject matter, especially in the subjects to be taught; an understanding of the learning process, of the educational enterprise, and of interrelationships between school and society; and effective teaching abilities through methods courses

and student teaching. The first of these tasks is basic to the others, and the first two of these tasks are considered unquestionably appropriate for honors work. The appropriateness of honors work in the third task, the development of teaching skills, is subject to debate. (See Appendixes A and B.)

The honors program is devoted to achieving greater breadth and greater depth of inquiry, understanding, and appreciation; and its base is therefore substantive, no matter what the subject field or combination of fields. In the professional education courses embodied in the second task, the general characteristics of honors work would not differ markedly from those appropriate in general education. However, there is one important additional aspect which may be characteristic of honors in professional education. This is the development of a professional esprit de corps among teacher candidates, especially those of highest purpose, scholarly grasp, and teaching effectiveness. This esprit de corps is capable of a leavening qualitative influence, both within schools of education and in the institutions in which the individuals subsequently do their teaching. It may, therefore, be a major factor in attracting into the teaching profession many of the better students, thereby contributing to the upgrading of the whole profession and thus to the general improvement of the educational process itself.

Elementary and Secondary Education Majors

The dilemma in providing honors for prospective elementary teachers is that, by virtue of the extreme breadth thought necessary in their programs, it is difficult for them to push far enough into any one subject to get to the level which seems appropriate for honors work. The suggestion of a major in the first 4 years and then an internship assumes a 5-year program.—J. W. Maucker, *State College of Iowa*

Time is one of the recurrent practical problems confronting an institution intending either to cope well with teacher preparation or to introduce an honors program in education. The problem is considerably more pronounced for elementary than for secondary majors. The honors experience itself does not necessarily add to the amount of time needed. Rather, the typical teacher-education sequence does not have flexible time within it to include all the configuration of elements, with opportunity for breadth and depth of approach, which are necessary in a good honors program. Unless a student is able to take ad-

vantage of a considerable amount of advanced placement, it is difficult for him in 4 years to obtain adequate general education, meet requirements for a full major, accumulate the professional education credits necessary for certification, and do honors work. Fortunately, however, institutions are finding ways to apply honors work toward meeting formal certification requirements. To cope further with the situation, some institutions, indeed some States, are moving toward a 5-year sequence in teacher education.

There has long been a tendency for institutions to require their teacher-education students to have the same general education background as other students. This in itself may provide opportunity for education majors to have some honors experience in the general education program. Furthermore, a number of institutions have been moving toward a required subject major, rather than an optional one, for elementary majors. For those students who are exempt from some of the beginning courses, it is relatively easy to build such a major on top of the required introductory courses.

At the University of Wisconsin, consideration is being given to separate kinds of required subject-matter majors, a disciplinary major and a broad fields major, in order to accommodate the differences in depth and breadth needed by teachers at the different levels of elementary and secondary schools. There is general feeling, however, that a required subject major for all potential elementary teachers would mean an increase in the number of credit hours for the degree. This does not seem unreasonable, in light of similar lengthening of programs in engineering and other professional areas.

New York State recently announced that after 1966, when 5 years of college preparation will be required for the elementary certificate, a full subject-matter concentration will be required. Further, the new regulations provide that where the number of semester hours is specified, the equivalent in honors work will be accepted. The California legislature also has changed certification regulations to make a subject major in an academic area a part of the requirements for a credential for general elementary teaching, but the exact definition of "an academic area" is still being considered by a statewide committee.

At this time, there is no one pattern for education programs that extend into a fifth year or longer. A comprehensive study by the Office of Education shows that in 1959-60 there were 1,976 fifth-year programs in teacher education at 462 institutions. These included 245 systematic 5-year programs at 123 institutions.⁷ There is great diversity of practice in the sequences of courses; and the absence of a

⁷ Henry Harap, *Fifth-Year Programs of Classroom Teacher Education: A Survey Report*. Washington: U.S. Office of Education, 1963 (in preparation).

predominant pattern is evident, both in general fifth-year programs and in the systematic 5-year programs.

Opinion is divided as to whether the bright student should invest more time in his initial preparation and then use the fifth year to meet certification requirements, whether subject matter should be taken in the fifth year after the teacher has had experience and knows what will be most valuable, or whether the entire program should be combined and extended. The latter might be the program of the future if we accept the suggestion of all the leaders in the country who say that it takes more than 4 years to train a good teacher for elementary or secondary schools.

While major attention must be focused on programs of future teachers, still some consideration must be given to upgrading the training of present teachers. Over the years the concept of teacher education too often has been restricted to professional programs. In an effort to provide balance between the academic and the professional, some institutions now advise and make definite provisions for experienced teachers to take subject-matter courses at the master's level. At the same time, to accommodate graduates of liberal arts colleges who want to be teachers, some institutions have devised fifth-year programs which are devoted largely to providing the professional training required for certification. Master of Arts in Teaching programs may emphasize professional training, or subject matter, or a combination of the two, depending upon the needs of individual students.^a Since higher standards for admission are set for the fifth year than for the regular program at most institutions, the essence of these programs is considered at least a step in the direction of honors.

Regardless of the length of the teacher education program, certification requirements exert a powerful influence on its makeup and hence are a limiting factor to be considered in planning to include honors work. In some States, highly inflexible certification regulations specify the exact number of hours required in each of a whole list of courses. Even though exploratory and experimental programs show that the time served in courses is not a valid measure of accomplishments, such certification requirements contribute to the persistence of stereotyped programs. It must also be recognized that some States issue so large a proportion of substandard certificates that, no matter what the stated standard certification requirements are, the breach in itself becomes the standard.

^a "Honors and the Improvement of Teaching--Ford Grant Programs," an ICSS report including short reports by 15 universities on special features of Ford Grant programs. *The Superior Student*, May 1961, p. 16-20; and "The Yale Master of Arts in Teaching Program," address delivered by Edward J. Gordon, at ACLS-AAAS Conference on New Directions in Teacher Education, in New York, February 23-24, 1962 (Available from John R. Mayor, Director of American Association for the Advancement of Science, Washington, D.C.).

Wherever certification requirements are flexible enough, it may be possible to consolidate existing course materials, perhaps introducing a broader approach to teacher training, and permit superior students to deal with all the material in a shorter period of intensive study, followed by proficiency examinations for which they can be given the State-wide required credit. With the attention now being given to programs for academically talented students, some States are moving in this direction in an effort to provide superior teachers in programs designed for these academically talented students.

The growing demand for college teachers is another factor which has an indirect influence upon the development of honors programs for prospective elementary and secondary teachers. Unless gifted students interested in teaching are offered intellectually challenging teacher education programs, they are likely to elect to do honors in a strictly academic discipline and gravitate towards college teaching. To the extent that this siphoning takes place, fewer bright students will be left in the field of professional education.

It must be recognized, of course, that there is a definite need for college teachers who themselves are experienced in the honors approach. Indiana University has a 3-year master's program, made possible by a Ford Foundation grant and deliberately aimed at the preparation of college teachers. At the end of the sophomore year, students are selected for the program on the basis of academic and personal qualifications. As far as possible, these students are incorporated into existing honors programs or placed in special programs designed for them. The program is concerned both with the sound liberal education of undergraduates and at the same time with expediting the eventual receipt of the Ph. D. For example, to make certain that students will be able to meet the requirements for graduate training, language emphasis is sufficient for students to be prepared to pass examinations in two languages by the time they receive their master's and are ready for further graduate study. Negotiations are presently under way with other 4-year colleges in the State to arrange to take into the program and support for at least a year of graduate study those students identified on their campuses at the end of the sophomore year. One way of describing the program is that Indiana University is attempting in the sophomore year to make the identification that the Woodrow Wilson National Fellowship Foundation makes following the end of the junior year.

A closer functional relationship should exist between honors programs and the graduate schools, both in theory and in practice, especially insofar as the education of teachers is concerned. This is true not only for departmental honors programs but particularly

so for the interdisciplinary aspects of general honors, where no discipline can be an island. Graduate schools might well consider setting up interdisciplinary graduate seminars for the sciences, the social sciences, the humanities, and interrelated areas. Such seminars or colloquia at the graduate level might serve with other things as a type of corrective to insular departmentalism.

From the general honors point of view, it is important to acknowledge that many of the great contributions to culture, past and present, were not made from academic departmental perspectives. This is something that graduate schools of education might well recall when they have their quarrels with the subject matter disciplines. Certainly, graduate schools of education should be protagonists for, and exemplars of, an emphasis on the works that deal with education in the totality of culture. It would be one of the best contributions they could make towards curing the maladies of overdepartmentalization at all levels.

Teachers are inclined to teach as they were taught. Too many professors are unprepared to face the challenge of interdisciplinary undertakings of a high order such as are needed in honors. They tend to avoid, or evade, the challenge of the bright students, whose minds keep ranging beyond departmental walls. To the extent that they can combine depth with range, those who teach potential teachers can produce a leavening effect which will enable our schools to give future generations the emphasis upon quality that is so much in demand.

Student Teaching

If we separate the practice of teaching from honors in teacher education, we shall have honors graduates who nonetheless are poor teachers.—Lindley Stiles, *University of Wisconsin*

There has been so much controversy about whether student teaching is appropriate for honors work that the experience is here treated separately from other professional educational work which is part of the preparation of teachers. In reality, the debate hinges on the conception of the nature of honors work and the extent to which performance and the inquiry into ideas are interrelated in the pursuit of scholarship.

The question, then, is whether by definition honors should be limited to traditionally recognized areas of academic excellence or whether it should also include some kind of recognition of excellence in artistic

creation or performance, including educational performance.⁹ There are those who maintain that the composer or performing artist should spend his time in an art school or music conservatory and that the university is obliged to treat artistic creation or performance as useful experience—along with appreciation—but not as an honors accomplishment.

In the fine arts, for example, courses in art history or the understanding and appreciation of art are unquestionably considered appropriate for the honors approach. However, there are some people who maintain that, in a course in painting, a creative student with a flare for handling materials may or may not be a scholar and therefore may or may not be aware of the substantive learning associated with the experience of painting a picture. Therefore, they would not consider the painting of a picture to be appropriate for honors work unless it could be shown that considerable substantive learning accompanied the application of skill.

Typewriting is an example which can clarify the debate still further. Clearly, it is more mechanical and less creative than the painting of a picture. Those who consider learning to type a mechanical process would not only deny typewriting a place in an honors program: some would deny degree credit for courses in typewriting. On the other hand, it is possible for a student to learn to type in connection with the study of learning theory. For the superior student interested in the psychology of learning, such a course, it might be argued, could conceivably qualify for honors work.

Those who take the attitude that students learn to teach by teaching, with criticism and analysis by the supervisor, hold that student teaching is a method of being coached for a skill—an important skill, to be sure—and that this experience differs from substantive inquiry, which they consider the key ingredient of honors. If practice is the confirmation of a theory or hypothesis in an inquiry, they hold, then that practice takes on substantive content. Likewise, where the practice in question is an art and the experience results in an understanding of the principles of composition, then the two are not isolated. But, unless student teaching is performed with definite concern for its relationships to the theories or ideas involved, then it becomes simply a skill and lacks the necessary ingredient for an honors approach.

Advocates of honors programs for teacher education do not like to see student teaching equated with learning skills in typewriting. They think of student teaching as being a point at which there is

⁹ This question is treated in more detail in Appendixes A and B, where the address by Edward W. Strong and comments by other participants in the ICSS conference show both sides of the controversy.

creativity, at which there is growth, indeed at which philosophy—the philosophy of education—becomes the substance. If we separate the philosophy of teaching from honors in teacher education, they say we shall have honors graduates who nonetheless are poor teachers. In fact, in honors programs in any professional area—not just in teacher education—care must be taken not to neglect the more practical aspects. Theory and practice should go together, not merely in the utilization of practice in the field of theory but also in the sense that some of the most exciting ideas might be engendered in practice and brought back to the discussion for analysis. In other words, these educators maintain that honors in teacher education must not be content with mere brilliant theorizing about education to the neglect of the homelier and perhaps finally more important tasks of testing theory through observation and practice.

If a student teaching program is accompanied by work in learning theory or methodology, the actual performance of students can provide the evidence for testing hypotheses, for showing up clichés in theory, for actual advancement in basic learning. In such a program, student teaching can be as exciting and as involved with ideas as anything in pure theory taken as such. At the same time, the individualized coaching or supervision may have its parallel with the tutorial aspects of other kinds of honors programs.

In spite of differences in conception of what constitutes honors work, there seems to be general agreement among authorities in teacher education that those responsible for supervised experiences—as well as those responsible for the liberal arts aspect, the history and philosophy of education, and educational psychology—have an obligation to conceive challenging, stimulating, and distinctive ways of handling bright students. They maintain that there are activities which are appropriate for gifted students in applied areas which are different from those that are appropriate for the less talented; and when the distinguished and imaginative work in student teaching seems to meet the quality challenge of honors programs, they advocate designating the work as “honors” and giving honors credit for it.

At this point, although there seems to be little consensus of what combination of elements constitute an honors program in student teaching, the practical experience aspect of teacher education programs for superior students is receiving increased attention. During the past year, for example, four universities in upstate New York—Cornell, Syracuse, Rochester, and Buffalo—have been working together on plans for a new program for superior prospective teachers. The practical phase of the program will include an internship experience in the senior year, in which the students will do full-time teaching for one semester. The schools have been carefully selected to see that

interns are placed where change is going on, and especially where the method of inquiry is a fundamental part of the teaching. Those who are working with the program believe that student teaching experience of honors quality can be provided in any situation where the best students work in the best schools with the best teachers in the best programs which can be devised.

Some hold that, for a bright student, it ought to be possible, with the right teacher, to make any subject into an honors experience. From Peabody College comes the example of a girl in elementary education who qualified as a full-time classroom teacher in about half of a full quarter. She used the rest of the time to extend her learning possibilities: as a principal's intern, learning the problems that come into such an office; as a teacher, joining other teachers at the grades below and above the grade level which she was to teach; and as a participant in the junior high school, seeing the problems of articulation between the elementary and the junior high school years.

In any case, there can be little doubt that, when the bright student teacher is assigned to an exceptionally competent supervising teacher, the tutorial kind of experience can provide numerous opportunities for use of the analytical approach. Methods of inquiry and the attempts to evaluate results critically can most certainly be involved. If a teacher education institution is going to hand out some kind of accolade to those who have done honors work, the quality of the student's work in student teaching or in the internship should not be excluded in determining individual qualifications for honors recognition, although it may not be necessary to call the experience an honors course.

Problems and Promise

Honors must remain vigilant against organizational "busyness," against mere reiteration of claims of excellence accompanied by meager or narrowly elitist programs. Claims of achievement must be subjected to rigorous analysis to forestall mere affectations and mannerisms of excellence.—Joseph W. Cohen, ICSS

The honors scene is likely to be a fertile one for the exploration of both methods and ends in all education, thereby contributing to the development of cooperation between the subject disciplines and education in such exploration. Nevertheless, there are theory and practice issues that emerge with reference to promising programs for su-

perior students. The theory is being progressively clarified, and practice is being tested through research at many of the institutions with honors programs. Further evidence of the general interest in these programs has been indicated by conferences, such as the one in November 1962 sponsored by the Committee on Personality Development in Youth of the Social Science Research Council. This conference was concerned with evaluation and research in honors programs.

Advocates of honors programs believe the honors approach is the answer to society's demand for general redesigning of college education. However, if honors programs are to offer such promise, they must be able to withstand the criticisms of those who remain loyal to the traditional program. There are four groups who may regard the honors program as a threat: those educators who are equalitarian by tradition and favor a minimum of grouping lest some be stigmatized as second-class citizens; those college administrators charged with making the books balance, who know that honors programs, if they are much good, are expensive; those faculty members who fear an overload of work in the absence of adequate allowance for staffing; and those grade-conscious bright students who fear inflexible use of the normal curve in honors courses. In the total picture, the progress of honors programs depends upon counteracting the fears of these groups. This requires not only adequate planning and implementation of practices but also adequate evaluation and objective publicity.

On the other side of the coin is the danger of a tightly closed circle developing in honors if conceptionalization develops into a kind of doctrinaire alliance of insiders. It is conceivable that this sort of thing could pyramid and become an extremely artificial fad, if there is more attention to questions of how to organize programs than there is to the attack on the original problem which started as a sense of irritation because bright students were not treated in a way that is appropriate for bright students. To the extent that those who are concerned with honors continue their campaign for appropriate ways of teaching bright people, they will be making honors programs the proving ground of a real revolution in the approach to methodology in higher education.

Content v. Method

It isn't a question of methodology versus content. For any given content, we seek that method which enhances and enriches the learning experience and causes the student to handle the content with which he is dealing in a more efficient manner.—Stephen Romine, *University of Colorado*

The real promise of honors programs—and the answer to many of their problems and pitfalls—lies in resolving the controversy between content and method. There are those who feel that the general education movement is being buried as rapidly as possible all over the country because it assumed that content could be handed out by way of sound generalizations. The real concern, some maintain, is that a student be able to act like a scientist and think like a scientist, act like a critic and think like a critic, act like a philosopher and think like a philosopher—that is to say, he ought to be able to function within the discipline. He must know and understand content, to be sure, but he must be able to do more than remember 70 percent of those sound generalizations somebody handed him in some "Man in the Physical World" course. Lively professional schools and departments in arts and sciences want people who can *do* things, who are competent in the methodology of a discipline. Thus they hold that the dichotomy between content and method in honors programs simply does not exist, that these are two different questions. One question is what the content of the curriculum of the honors students is, and the other is what kinds of teaching conditions exist for him.

The answer to the question of content is as variable as the university itself and may take the direction of breadth, depth, acceleration, enrichment, or integration, depending upon the philosophy of those who plan the program. However, overemphasis upon content can result in the pedantry of fact at the expense of flexibility and curiosity. After the first flush of novelty wears off, the work may be just as sterile, confining, and stultifying to students as regular courses. Without adequate attention to content, honors programs could simply provide license for irresponsible and glib verbalization—in effect, a means of escape from the rigor of academic discipline. Thus, the job of an honors program is more than the mere acceleration of bright students; it must expand their knowledge, of course; but it must also improve their skills in the use of knowledge, and it must stimulate their curiosity so that they continue to learn.

The answer to the question of method in honors is the deliberate provision of conditions in which a student can have continuous and intensely valuable learning experiences, no matter what the field. Interdepartmental planning or collaboration must include content, but it must also give adequate attention to the teaching-learning conditions which determine the climate for learning. In an effective honors program, the student takes a more active role in the learning process than would be expected in the regular program. Classes are likely to be smaller so that the student can do more effective writing, more discriminating reading, more independent and demanding work, more purposeful experimenting, reacting, appreciating, or discussing. Important factors in creating this kind of teaching-learning situation are teachers who do not feel that they have to do all the talking and students who have demonstrated a genuine interest in ideas. Such a program cannot be fabricated with the help of scissors and pastepot out of earmarked sections of existent courses already listed in the catalog.

In honors, then, it is not a matter of content v. method but a question of finding or creating the best combination of content and method for a particular purpose. In other words, the honors student's goal of excellence goes beyond the mere mastery of fact and asks the question, "Knowledge for what?" The dichotomy between content and method, therefore, is an artificial one. The two are so interrelated in the accomplishment of educational objectives that neither can be neglected without jeopardizing not only the quality of the learning experience but also its value to the student after he makes the transition from formal education to life.

Climates of Cooperation: Articulation, Integration, Coordination

There is imperative need for mutual cooperation—for what I would call a "climate of cooperation" in working on the problems of structuring an honors program. How cooperation is actually achieved is immaterial. The essential thing is that it be achieved. This tests the uniqueness, the artistry if you will, on each campus.—James H. Robertson, *University of Michigan*

Effective articulation will be even more necessary as schools permit able and ambitious students to

move ahead at their own speed. Education must be a continuous process, not a series of discontinuities.—

Charles R. Keller, *John Hay Fellows Program*

Articulation, integration, and coordination are among the important elements in maintaining a climate of cooperation in honors programs. A good honors program should be conceived and implemented in a climate of cooperation among faculties of liberal arts subjects and those of professional schools *within* the institution. There should also be effective cooperation *among* institutions in the sharing of information and in the exploration of mutual problems in their search for workable unity. There is need also for cooperation between institutions at the various levels, such as the secondary school, the junior college, the university, and the graduate school. Only by stressing vertical as well as horizontal communication and other interrelationships can we expect the bright student—or any other student, for that matter—to avoid repetition, to lengthen and deepen his thinking span, and to make the progress of which he is capable.

There are numerous examples of cooperation between high schools and colleges in providing suitable programs for superior students.¹⁰ These programs may involve acceleration, enrichment, or ability grouping, depending upon the types of learning involved, the educational objectives sought, and the problems of administration encountered.

Perhaps the best known type of plan for superior students is the Advanced Placement Program administered by the College Entrance Examination Board. In this program, superior students become eligible for advanced standing in college in a number of areas on the basis of examinations on college-level work which they have completed in high school.¹¹ One of the major features of this program is the improved articulation resulting from bringing college and high school teachers together on examination committees, as readers of examination papers, and at annual 3-day subject conferences in connection with the Advanced Placement Program.

Another type of advanced standing program which is gaining in popularity provides a form of flexible progression from high school to college by permitting superior students to take college courses concurrently with their high school programs. California passed legislation in 1959 authorizing junior colleges to admit to part-time study

¹⁰ *The Superior Student*, since its inception in April 1958, has published more than 40 items (articles and notes) on high school-college liaison. See also *The American High School and the Talented Student*, by Frank O. Copley, Ann Arbor, Mich.: The University of Michigan Press, 1961, 92 p.

¹¹ Copley, loc. cit.; Shirley A. Radcliffe, *Advanced Standing*, New Dimensions in Higher Education, Number 8. Washington: U.S. Government Printing Office, 1961, 24 p.

superior 12th-grade students, who continue to attend high school classes for at least the minimum school day.¹² Other schools have similar programs on a purely cooperative-planning basis, and reports indicate significant advantages in both acceleration and enrichment for students and in articulation among institutions.

At the University of Pittsburgh, a Coordinated Education Center has been set up to deal with articulation and cooperative planning at all levels, from the elementary grades to graduate school. The first of a series of reports summarizes considerations, describes procedures, and discusses implications of flexible progression.¹³ Flexible progression is defined as a general plan for permitting the able student to move from one institutional level to the next whenever he seems prepared to do so. Examples are drawn primarily from schools in the Pittsburgh area, but the report suggests possibilities for cooperative planning anywhere.

Articulation between levels of study is more than a device to prevent overlap or repetition. It can help to build mutual understandings about objectives and about the appropriateness of acceleration in certain types of learning situations and enrichment in others. At the same time that it stimulates action toward ideal programs, it can build intelligent acceptance of necessary compromises between what is desired and what is administratively and financially feasible as the program progresses. In other words, improved articulation can help institutions at both levels to devise common goals for helping students work toward maximum development and to find the best ways of working toward those goals.

No less important than the articulation between levels of instruction, the high school and the college, for example, is the integration and coordination of the total college program for superior students. Since prospective teachers take about three-fourths of their work in liberal arts departments, professors in the liberal arts have a great responsibility for the education of teachers as have the professors of education. They should, therefore, cooperatively conceive and jointly execute programs for the preparation of teachers. The University of Colorado, among others, is concerned with minimizing the separation between general and professional education which normally begins in the junior year. Students in education are encouraged to take honors courses with other students from other fields in both the junior

¹² "Study of Enrollment of Superior High School Students in California Public Junior Colleges," Sacramento, Calif.: Bureau of Junior College Education, State Department of Education. 7 p. (Mimeo.).

¹³ C. M. Lindvall with the collaboration of J. Steele Gaw, Jr., and Francis J. Rifugiato. *Meeting the Needs of the Able Student Through Provisions for Flexible Progression*, a report of the Regional Commission on Educational Coordination and the Coordinated Education Center. Pittsburgh, Pa.: University of Pittsburgh Press, 1952. 20 p.

and senior years in order to continue exploring the world of ideas with students from other disciplines. At Michigan State, the growing respect for the quality of students in education is believed to be related to the fact that these students take a substantial amount of honors work in other parts of the university.

It is not enough to have a departmental honors program in education *or* an honors program in general education. To fulfill its proper role, an honors program for prospective teachers should involve all possible resources of the university that might provide honors quality work. The general education program should provide the relevant background for the more sophisticated consideration of education issues, thus helping to bridge the gap between college or general honors, honors in the subject major, and honors in the school of education. For example, courses in American philosophy should not be slanted unduly in the direction of educational issues but should certainly consider them; courses in American intellectual history should look at ideas and developments relevant to education; courses in American sociology should include attention to its educational system; and courses in political science should look at how decision-making processes affect the schools. Such an approach in the school of liberal arts is appropriate for all students as a basis for informed leadership on educational questions. For those majoring in education, it provides the necessary background for study of critical educational problems related to their careers.

In addition to what is to be gained from deliberately planned interdisciplinary content, there is also the sort of cross-fertilization that comes from student analysis of situations from the points of view of various disciplines. Such give and take of ideas is invaluable experience for the teacher who will later help to establish climates of cooperation in which succeeding generations of students will find nurture for maximum development of their capabilities.

Selection of Honors Students

I do not underestimate the power of honors to awaken the intellectual interests of the gifted-but-lethargic, but a word needs to be said for the student who is, by the usual measures, not quite as bright as the brightest—yet who gives evidence of that genuine interest in ideas that marks the conduct of every good honors program. When the competition is severe for admission to the program, I would urge that demon-

• • • • •strated intellectuality be given full marks.—James
L. Jarrett, *Western Washington State College*

The selection of students for an honors program involves more than the determination of cut-off scores on intelligence or achievement tests or on grade-point averages. The conforming "A" student may be more easily recognized than the underachieving student with a high I.Q. It is possible, however, to overdo "potentiality" in the absence of objective evidence about performance in learning situations. Some colleges have found cooperation with neighboring high schools a useful practice in determining admissions to 4-year honors programs, but even this is not foolproof. For this reason, admission and dismissal from the honors program should be flexible enough that students will not be penalized for errors in judgment of the admissions committee. This is especially true when the honors program begins in the freshman year, which seems to be the current trend.

Such flexibility means that, by mutual agreement, a student registered for honors should be free to move into a regular program without penalty if it is determined that he was prematurely placed in a program not suitable for him. It also means that there are provisions which enable "late bloomers" to get into the honors program when they have demonstrated their ability for honors work.

The difference in maturity ages of students, and especially the general difference in maturity ages between men and women, poses special problems in the selection of honors students.¹⁴ Because women mature earlier and are inclined to be grade-getters or conformists, they tend to dominate the upper scholastic ranks of high school graduating classes and of freshman and sophomore college classes. Four years later, the number of men and women at the top tends to approach equality. Consequently, some suggest going lower in the overall rankings in selecting men than in selecting women for special attention in honors programs on the freshman level in order to come out 4 years later with a more nearly equal distribution of honors graduates of the two sexes.

The ratio of women to men of the upper-intelligence range in the teaching profession is not the point at issue. Not only do a larger percentage of men of college age go to college, but the retention rate for men is greater.¹⁵ The problem, then, seems to be the difference

¹⁴ See the following articles in *The Superior Student*: Margaret Mead, "Gender in the Honors Program," May 1961, p. 2-6; J. W. Cohen, "Women in Honors," October 1961, p. 10-11; and "On Margaret Mead's 'Gender in the Honors Program'—Conflicting Views: Male and Female," March-April 1962, p. 16-23.

¹⁵ Edith M. Huddleston, *Opening (Fall) Enrollment in Higher Education, 1960: Analytic Report*, Washington: U.S. Government Printing Office, 1961, p. 14.

in maturity rate of individuals of the two sexes rather than the difference in intellectual potential.¹⁰ It has long been recognized that the roles of women are discontinuous, that women have mixed goals of domesticity and professional careers. A given number of women honors graduates, therefore, is not likely to result in as many active careers as would the same number of men honors graduates. The solution to the problem may be intricately related to counseling. If bright women, through acceleration, can be brought farther along toward realistic goals for that period before they assume family responsibilities, the supply of qualified teachers may be significantly increased.

In the context of an actual institutional situation, problems related to the selection of men and women for honors work may take on immense importance. For example, Indiana University came face to face with this problem with reference to its Three-Year Masters Program. In attempting to be realistic in selecting from sophomore honors students, predominantly female, those who might be considered potential college teachers, the committee faced the dilemma of identifying the greatest possible number of students who might be on college faculties 10 years hence. This task involves problems of differential counseling; for if a young woman is good, she can go into elementary or high school teaching with certainty, while college teaching is a somewhat more remote possibility.

While the issues related to the maturity of men and women students remain unresolved, there is no question about the need for an overall increase in the number of teachers who know what honors work is by having done it themselves. But if the threshold into honors is lowered to increase numbers, quality will suffer. Since it takes excellent quality in staffing and content of an honors program to draw excellent students to it, it might be better to err on the side of high selectivity, especially in the initial stages of the program. Well begun may insure better done thereafter.

¹⁰ In this connection, it is interesting to note that women's colleges have in general paid much less attention to the work done in advanced placement programs than have men's colleges, with the result that the number of young men who take advanced placement work is greater than the number of young women, in spite of the earlier maturity of women.

Staffing and Financing Honors Programs

The key factor in the success of honors is the instructor himself.—Henry L. Adams, *Western Washington State College*

The quality of any honors program depends primarily upon the teachers. Indeed, the teacher is the prime determinant of the content, the methodology, the objectives, and, in fact, the results of any course of study. Although content may to some extent be specified by administrative decree, the quality of the learning experience itself depends upon the philosophy, the enthusiasm, and the skill of the staff. Desirable results do not automatically come with designation of an individual to teach an honors course regardless of how well that individual may know his subject. They cannot be superimposed by administrative direction. For that reason, it is not enough simply to staff an honors program with those faculty members who have the longest experience or the greatest amounts of advanced training, no matter how willing the institution may be to finance reduced teaching loads to provide for smaller classes and additional time for planning.

Assignment of honors courses to bright young professors may not be a foolproof answer either, although they may be less burdened by habits than are some of their more mature colleagues, and some of them may be fired with enthusiasm to try new things. At the beginning of their careers, it is not unusual to find that many younger staff members are remarkable conformists, acquiescing to the academic customs and traditions which, as graduate students, they helped to perpetuate. Bright though they may be, these may bring to honors courses little more than an enthusiasm for the chance to know bright students and an eagerness to be identified as honors course instructors.

The staff member selected or assigned to an honors program, therefore, must be able to do more than pass on to receptive bright students the wealth of his own knowledge or the wisdom of his own thinking. He must inspire them to learn for themselves, to locate information wherever it may be found and evaluate it to find out what is reliable and valuable, to analyze pros and cons and recognize alternatives and potentialities—in short, to make the learning experience contribute to the students' ability to think for themselves.

Administratively, a good honors program is expensive. It requires staff time not only for cooperative planning of the honors program itself and determining how it fits into the institution's total program but also staff time for the planning of individual honors courses.

Although a dedicated staff may voluntarily carry a limited honors program as an overload during the initial flourish of enthusiasm, they cannot be expected to do so indefinitely.

Since honors classes are smaller than other classes, a larger faculty is required to accommodate increases in the number of honors participants and honors courses. There should also be a fair allowance for participation in colloquia, tutorials, and general administration of the program. Additional library materials may be needed to accommodate honors students. Allowance should also be made for additional testing in connection with admission of students to the honors program. There should be provision for evaluation of the program itself to determine its effectiveness and potentialities for improvement.

In other words, quality in programs for superior students is no accident. It requires planning, teamwork, and dedication; and it requires adequate financing. Recruitment of faculty for honors work is more likely to succeed where the demand for quality is pitched high. Like will attract like. Unless the program can be adequately budgeted, it should not be undertaken with the hope that it will then flourish, unless there is reasonable prospect that an initial sacrifice will bring funds needed for continuation. In the final analysis, we cannot afford to do less than the best for the best students.

Since teachers are inclined to teach as they are taught, the selection of staff for honors programs for potential teachers is especially important. Some institutions insist that such teachers have some experience in the public schools, and many provide opportunities for staff to observe in the schools at the levels for which they are preparing teachers. It is not enough for the education teacher to expound the theory of honors work. He must practice it in his own classes if he expects his students in turn to be able to deal effectively with their superior students.

Guidance and Placement

Flexibility is the crux of honors. This means that you treat students as individuals. You cannot say, "This is what I'm going to do with honors students," but rather, "This is what I do with John who happens to be an honors student. It is quite different from what I do with Tom, who also happens to be one."—
Loraine V. Shepard, Michigan State University



The honors program ought to be part of the total program, and not something that is just added on. In the stress on more and more knowledge, pressing honors students to take more courses simply because they are brighter and can do more work is no replacement for the tailor-made program in which the student gets a balanced diet in the various disciplines and intensive study in those areas which are most vital to his own goals.—Wallace L. Anderson, *State College of Iowa*

Properly selected, honors students present a complex picture of individualized needs and problems. Honors programs therefore have a built-in flexibility and a variety of alternatives from among which the student, in consultation with his advisor, may choose. Advising is thus a subtle factor in honors, and its proper organization and implementation are important to the success of the program. The advisor must know, for example, how to handle the indecision of the bright, the ones who are so good they can move in any of a number of directions, and what to do about the students who are consciously grade-getters, those who have met the criteria but are pushing for the wrong reasons.

It is believed that the institutions that are doing the best job of honors counseling have four characteristics in common: (1) Honors counselors are selected; (2) counseling is a recognized and organized faculty activity; (3) advisors have power to make decisions; and (4) advisors are given due recognition and reward.¹⁷

The question of who advises depends largely on the size of the institution and its resources. Academic counseling of honors students is usually done by regular faculty members. There should, however, be relevant liaison with the regular guidance staff; and the latter should become increasingly aware of the problems and objectives of honors programs. Some members of the guidance staff should concentrate on these problems as specialists.

The reason faculty advisers are normally preferred over guidance staff for academic counseling of honors students is that the adviser has to work with the student at the point in his studies where his commitment is most vital. Furthermore, he must seek to enhance involvement of the student in all that is substantial to his intellectual quest. The important thing is that an appropriate overall climate

¹⁷ James H. Robertson, "Statement on Honors Counseling," *The Superior Student*, October 1961, p. 6; James H. Robertson, "Academic Advising in Colleges and Universities: Its Present State and Present Problems," *North Central Quarterly*, January 1958.

be created and that counseling responsibility be adequately worked out so that each student at any time will know to whom he can go for advice.

An honors adviser has to be one who can help a student determine the program that will be of greatest value to him, both as a person and as a job holder, quite apart from the biases of the advisor himself. A good advisor does not hound every bright student to plan ahead toward the Ph. D., whether the student wants to or not. He does not look down upon the student who honestly wishes to teach at the elementary or secondary level, and at the same time he does not get in the way of one who wants to teach at the university level. He does not divert a woman to a less spectacular job because of her sex; nor does he insist that every woman should go into either elementary or secondary teaching simply because children are thought to receive greater sympathy and understanding from women than from men. By the same token, he does not advise a male student to go into teaching simply because the profession is thought to be in need of men. However, being aware of the earlier maturity of women and the tendency for their careers to be discontinuous, the advisor may in some cases favor acceleration of a woman student in order to make fuller use of feminine talent and get her into her chosen career earlier.

There is need for further exploration of experience and research findings on numerous unresolved issues related to men and women in honors and on the problems of differential counseling with respect to the preparation of teachers. Certainly, these topics and their inter-relationships might well receive attention at some of the future conferences on honors.

A further problem in guidance of students arises out of inadequate communication between faculties in arts and sciences and those in education. This can leave the student in a kind of "no man's land" insofar as teacher education is concerned. There have been reports, for example, that general honors students have sometimes been advised *not* to go into honors in education even though they planned to become teachers. On the other hand, there may be situations in which students have been pressed into education majors when their personalities and their interests suggest other work. One of the special responsibilities of an honors adviser, then, is to help students think in terms of their own goals, with some rationale for those goals.

In terms of who does the advising, we should not overlook the important influence of the peer group on honors students. One of the things that long experience with honors suggests is the enormous power of the mutual advising and emulation of students. Recognizing

the influence of the peer group, the University of Colorado next year will supplement the work of the Honors Council, which does the faculty advising, by assigning groups of 10 entering freshmen to each member of the Honors Union Council, composed of 14 upper division honors students.

The proportion of a student's total program devoted to honors is an important factor in advising because it determines the alternatives available. Not all of a student's work is likely to be in honors courses. Some advising will at times involve placement of the student in those sections of required courses where he will be able to profit most—in certain regular courses where he will meet a teacher crucial for him or gain the needed balance in his total program, or in specially devised group tutorials. In many cases, work of honors quality for a particular student may depend more upon advising than on the label of honors courses as such.

In some institutions, students not formally admitted to the honors program are permitted to enroll in honors sections in fields for which they are qualified and have particular aptitude.

The proportion of work students take in honors courses varies among institutions and indeed at the various class levels and among the departments within institutions. At the College of Education at Illinois, students take two honors sections at the same time, seldom more. At Michigan, advising is considered of such major importance that the program is often described as custom-built for each student. On many campuses, the individual student may be advised to venture into at least one field about which he has some timidity.

At Wisconsin, a minimum of one-third of the student's work is required in honors courses; and, with advising, students may take as much as half of their work in honors. A student must have at least one course under honors procedure in each of two general areas outside of his major, and a certain amount of additional work must be outside the department of the major. Departments have widely different standards as to how much must be honors. In English, about 85 percent must be in honors courses; in other departments, the requirement is as low as 35 percent.

In the Honors College at the University of Oregon, all lower-division students take their distribution requirements in special courses. To provide honors work in the various disciplines, the college requires those who major in liberal arts to take six specific lower-division sequences—one in mathematics, one in natural science, two in humanities, and two in social sciences. The adviser can waive requirements for any student within certain limits, but not because the student is weak in the subject. For example, if the elementary education student

has a tight schedule, the adviser may permit him to waive certain core curriculum courses provided they are not areas of student weakness.

Regardless of the pattern which the honors program may take on a particular campus, advising makes a significant contribution to the honors climate or atmosphere. On some campuses, students who apparently have the ability to do honors work want to avoid it; on others, students who cannot qualify for full admission to the program are clamoring to get into those parts of it for which they can qualify. A few programs which bear the name of honors are criticized for doing little more than making good grade-getters, submissive conformers, or academicians in the faculty image rather than opening up for the students the full intellectual life of their time, with all of its controversy and trouble.

The honors task is a subtle one of establishing a pervasive intellectual climate. This is just as important for the school of education and for the preparation of teachers—maybe even more so—as it is in any other field. It may make a powerful contribution to relieving attrition in teacher training programs.

Problems encountered in retaining students in regular teacher education programs include lack of flexibility in course requirements and in the conduct of courses, lack of intellectual content in required courses, and reluctance to being diverted from major fields of academic interest. A responsive and challenging honors program, with competent advising, can help eliminate the last two of these problems and can eventually mitigate the first through influence upon certification regulations.

Certification requirements, in effect, reflect the pressures that have been exerted on State departments of public instruction. As a consequence, they are often a hodgepodge of specifications which may inhibit rather than guarantee the training of good teachers. Part of the problem is to help school officials understand honors programs so that they can place honors graduates in positions appropriate to their capabilities. Organizations within the profession are logical channels for working out the problems of honors and certification. For example, the National Association of State Directors of Teacher Education and Certification has been working with the American Association for the Advancement of Science on improving teacher certification requirements in the fields of mathematics and the sciences.¹⁸

Some States already accept honors credit toward certification when it is the equivalent of stated certification requirements. In Michigan,

¹⁸ "Guidelines for Preparation Programs of Teachers of Secondary School Science and Mathematics. Recommendations of the Teacher Preparation-Certification Study of the National Association of State Directors of Teacher Education and Certification and the American Association for the Advancement of Science." September 1961.

for example, certification requirements are stated so generally that it is possible for a person to have a liberal education *and* be certified at the same time. By the "Approved Programs Approach," which is used in Iowa, the State department of public instruction approves institutional programs of teacher preparation which meet certain broad minimum requirements and then accepts the institution's recommendation for certification even though the transcript may not strictly conform to the requirements recommended by the State.

Not only do honors directors need to work with agencies in recommending certification revisions, but they also need to be better informed about career opportunities for superior and talented teachers. As more and more students of honors calibre are directed to challenging teaching positions, the resulting orientation to the intellectual life should contribute to the pool from which superior students can be drawn for the teaching profession in the future.

There is more to recruitment of able teachers than good college programs and good advising, however. Conditions in the schools themselves are an equally significant factor, and the relevance of these to recruitment is treated later in this report.

Evaluation of Programs

It is not enough just to show that the teacher who had honors did a good job. The challenge is to find out whether or not in actual fact honors experience leads teachers to perform more capably than teachers with comparable intelligence who did not have honors experience.—J. W. Maucker, *State College of Iowa*

Every honors program should be so constructed as to provide measures and tests of its efficacy. It is important to know the fruits of one's labors. It is not enough simply to devise a program and implement it. There must also be evaluation of its substance and of results to determine what has been done best and what can be done better. In other words, honors programs have to be appraised carefully and objectively to determine whether or not they are doing the job expected of them when they were established.¹⁹

¹⁹ Since April 1958, 38 items (articles and notes) on research and evaluation have appeared in *The Superior Student*. See especially "Research on Honors," October 1961, p. 13-16, with subsections by Robert B. MacLeod, Ralph W. Tyler, Theodore M. Newcomb, and Paul A. Helst. Following proposals made at a meeting of ICSS directors, a Social Science Research Council committee has received a grant to hold a conference on research into honors programs. This conference was held in late November 1962 at Allerton House of the University of Illinois and was under the direction of Paul Helst of the Center for the Study of Higher Education at Berkeley.

Honors programs must be appraised, first of all, in terms of response and achievement of students while they are in college. It is also important to assess the value of honors programs in terms of the calibre of teachers such students become. These appraisals must be based on something more than opinion. Actually, there is very little evidence that a particular teaching-learning procedure is better than another; and we need to learn a great deal more about approaches to learning. It is to be hoped that honors programs, which put scholarship, a search for evidence, and the method of inquiry at the very pinnacle, will find ways to make these appraisals on the basis of objective evidence. Such evidence must go beyond the question of whether students taking honors work make good grades on tests or in some other way impress their professors.

In honors work in teacher education, the challenge is to be able to demonstrate in some way that honors make a difference in teaching. It must be admitted that there has been very little hard-headed research on the criteria of competence in teaching. Nevertheless, there is need to study what is learned by children, comparing those taught by teachers who have had honors work and those taught by others. Such comparisons, however, must be based on results obtained by teachers who, except for the honors experience, have comparable intelligence and personalities and have had comparable training. In other words, the very cream of the crop might be capable teachers regardless of whether their training was in honors work or in traditional programs.

The solution to these problems of evaluating honors in teacher education is not easy, but a beginning has been made. Research activities are increasingly being sponsored by organizations and foundations and by the Office of Education through its Cooperative Research Program. In addition, many institutions are financing their own educational research activities in order to improve their programs; and the reported results add to the pool of educational effort. Certainly, research related to college honors programs has implications for all students as institutions seek to help every individual to the extent of his educational reach; and research on honors in teacher education has implications for improvement of education at all levels of the educational continuum.

IV. Impact of Honors on Education in the Schools

In the last analysis, as always in the past, the quality of our schools will depend primarily on the quality of our teachers. Here, without any question, is the heart of our problem, and here is our central task—to bring to the classroom, seminar, and laboratory the large number of teachers of high qualification necessary to the full success of the educational enterprise.—Sterling M. McMurrin, former U.S. *Commissioner of Education*¹

Ability grouping and the use of the advanced placement approach should be pushed downward, perhaps even into the elementary school, and upward into the colleges, so that any student can learn what he is capable of learning when he is capable of learning it.—Frank O. Copley, *University of Michigan*

No matter how good teacher preparation programs may become, they will not by themselves be sufficient to attract enough able students into teaching. Conditions in the schools must offer opportunities for personal development and career advancement comparable to those in other professions for which these students might equally well prepare themselves, and the students must be made aware that these conditions exist.

The concern for superior students now extends through the whole range of American education from kindergarten on. Significant changes in the education of the academically talented are already taking place in the elementary and high school. These changes not only are creating rewarding and challenging opportunities for the talented; they also are generating a need for more qualified teachers who themselves have had honors experience in college.

¹ "The Teacher and His Education in a Free Society," address delivered at the annual meeting of the American Association of Colleges for Teacher Education, Chicago, February 16, 1962. (Mimeo.)

The Quality Emphasis, Its Implications

Unless we pay particular attention to the quality of instruction in the secondary and elementary schools, we may very well back into the kind of situation where the approach to education is economical and orderly but has little else beyond this to recommend it.—Lewis N. Pino, *National Science Foundation*

College honors programs designed to prepare teachers for working with superior elementary and secondary students do not exist in a vacuum. They exist in relation to the totality of experience the able student has both before he comes to college and after he leaves. For example, the college student brings with him intelligence, creativity, motivation, and influences of home environment. Therefore, intelligence may not be completely divorced from creativity, although present instruments do not show a great correlation between the two in the upper intelligence range.

There has been a terrific growth in honors programs in the high schools during recent years, and it may be well to examine one of these programs to see just what factors affect the kind of training teachers of superior high school students need. At Oak Park, Illinois, for example, there is ability grouping—three tracks in required areas—in all courses; and advanced placement courses are available for juniors and seniors. Just as the colleges have been asking the high schools to assist in the early selection of talent for their freshman honors programs, so Oak Park looks to feeder elementary schools to help in the identification of students for its honors programs. Honors and advanced placement courses are characterized by small classes, discussion, flexible schedules, emphasis on skill in notetaking, extensive use of the library, considerable writing, essay tests, and some team teaching.

For this work a teacher must, of course, have a scholarly bent. He must be enthusiastic if he is to evoke enthusiasm in ambitious students. He must have histrionic ability sufficient to attract attention to ideas. In recruiting such a teacher, administrators place great stress on good general education to provide interdisciplinary breadth. Completion of a 5-year or M.A.T. program is looked upon with favor. If he is to stimulate youth to learn, such a teacher must have the kind of mind that encompasses many things, not one steeped in factual knowledge alone. Since independent study and the seminar approach are stressed, any teacher who has had such experiences in his own honors training is considered much better prepared to stimulate critical

analysis by superior high school students than is the teacher from a traditional program.

There are many ways in which high school and college teachers can improve the liaison between the two levels.² For example, every college professor would be better prepared to do his work if he sometimes visited the high schools to find out what is going on. Conversely, the high school teachers should visit the colleges and universities, particularly freshman and sophomore classes, to observe things they might have forgotten during their own intervening junior, senior, and graduate years, as well as their teaching years. One interesting example of the exchange of high school and college faculty is the arrangement between Carnegie Institute of Technology and Taylor Alderdice High School in Pittsburgh.³ Such interchange brings increased understanding and respect for problems and practices at the two levels of institutions. The planning conferences of high school and college teachers in connection with the Advanced Placement Program have also been credited with exceptional contributions to improved articulation among teachers of the high schools and the colleges.

The question of methods, how to deal with students of high intellectual or creative ability, must in the final analysis be left largely to those individuals who teach. The real challenge is the quality of experience bright young people have at all levels of the educational continuum. Two major secondary school projects are illustrative of the efforts being made at this level.

A commitment to action programs for able students by secondary schools is one of the objectives of the Inter-Regional Project on Superior and Talented Students. This project was launched in March 1958 by the Commission on Research and Service of the North Central Association of Colleges and Secondary Schools, with financial support from the Carnegie Corporation of New York. Initially, the project involved 100 schools, some 18,000 selected students in these schools and their parents, and a relatively large number of educators who served as consultants and committee members. Later, other regional accrediting associations joined the project and additional schools affiliated with the program. Much progress has been reported for the elapsed portion of the projected 5-year program. Many thousands of superior students have been identified; special curriculum provisions have been made; individual counseling has increased; group guidance activities, parent conferences, and community in-

² The February 1960 issue of *The Superior Student* is devoted to this subject.

³ Edward Fenton et al., *College-High School Cooperation: Instituting the Advanced Placement Program in Pittsburgh*, Pittsburgh, Pa.: Carnegie Institute of Technology, 1961.

volvement have been stepped up; more students of ability are planning to continue education beyond the high school; and useful publications have been produced and distributed to schools and colleges throughout the United States. Current and projected goals and research themes are designed to complement and supplement efforts by other groups.⁴

The following research topics have been among the major categories of interest in the Superior and Talented Student Project: Clarification of terminology related to superior and talented students; flexible school entry related to factors other than chronological age on all levels of instruction; relationships among the ingredients of aptitudes, talents, and creativity, and their relationships to intelligence; place of early identification in the total identification process; attributes of motivation, including motivation factors, as they may be related to personal and family deprivation; preparation of future teachers to work with superior and talented students; objective interpretations of teachers' attitudes toward STS programs and toward superior and talented students; mental superiority and talent as they are related to responsibility and leadership; attitudes of communities and groups in the community toward these students; articulation among the various types of programs and levels of the educational continuum; the problem of talented underachievers and the relationships among achievement, ability, and levels of aspiration; grading and other evaluation techniques in "homogeneous" groups; reward systems for outstanding academic achievement; unrecognized groups of superior and talented students, including racial minorities, handicapped children, and students on lower socio-economic levels; girls as a neglected group in higher levels of learning; attitudes of superior and talented students toward teachers, other students, minorities, and the future; effects of ability grouping; relationships of mental superiority and talent to delinquency and gang activities; and projected costs for "optional" educational programs for superior and talented students.

The NEA project on the academically talented student is another example of the general concern for improved educational opportunities for superior students. Initially, this project was made possible by a 1958 grant of the Carnegie Corporation for a 3-year project. There were three focal points of activity: (1) A clearinghouse service of materials assembled from throughout the country and pertaining

⁴Additional information is available from Superior and Talented Student Project, North Central Association, 5454 South Shore Drive, Chicago 15, Illinois. J. Ned Bryan, former director of the STS Project is now with the Talent Development Project of the U. S. Office of Education. See his statement, "The Office of Education and Development of Talent," *School Life*, April 1962, p. 13-15.

to programs for academically talented students, (2) a consultant service, and (3) the development of 14 publications dealing with the academically talented student in administration, research, the fine arts, and the academic subjects.⁵ Numerous conferences were held in cooperation with departments of the NEA and other professional organizations. An additional grant extended the project for 2 more years, thus enabling the project team to work with major school systems in planning and strengthening their programs for the academically talented student.

Current practices and procedures in the education of the academically talented which were developed by the project include: Significant increase in grouping based on broader criteria, which include teacher judgment, student grades, achievement tests, and reading scores; repositioning of courses in accordance with indications of readiness; more effective diagnosis of intradifferences as indicated by standardized tests of intelligence and achievement; marked increase in number of Advanced Placement programs; supplemental teacher training in content areas independent of college and university credit but tied in with local certification and salary step placement; a master schedule which provides less emphasis on the quantitative Carnegie unit and more on the controlled flexibility design of variable size groups, time allocations, and team teaching; more frequent ungraded primary and intermediate grade organizations; some increase in the use of programmed courses; the movement of content down, particularly in the areas of languages and mathematics, and the development of back-up courses in science, English, and social science; greater emphasis on teaching for creativity and productive thinking and less on conformity; greater use of machine procedures for reporting to parents, pupil attendance, and schedule making; limited use of lay readers, particularly in advanced placement courses in English; extension of the school year through summer programs; flexible progression which permits students to take some work in college simultaneously with completion of the twelfth grade in high school; and expansion of curriculum offerings in cooperation with college faculties on a bimonthly basis in areas of art, music, and political science.

There are examples, also, of programs designed to help the teacher broaden his own thinking, thereby contributing to his ability to deal with superior students. For example, the John Hay Fellows program is an effort to help teachers increase their general education in the

⁵ Additional information is available from Charles E. Bish, Director, NEA Project on the Academically Talented Student, National Education Association, Washington, D.C.

humanities and their knowledge of their own subject.⁶ The fellows are not candidates for degrees. There are no grades, no examinations, no credits. The purpose of the program is to encourage teachers to do the work for its own sake, to improve their understandings and outlooks as individuals, and thereby to improve their teaching.

The Course Content Improvement Program of the National Science Foundation is an example of efforts to improve programs in a particular cluster of related areas. The program supports cooperative ventures among college and university scholars, high school and elementary teachers of high quality, audiovisual experts, test experts, publishers, and others with appropriate special talents needed in the preparation of new course materials. A most intriguing result of this effort to produce new course materials is a growing agreement that the teaching of contemporary science must be based on an analytical, open-ended approach. It is believed that the stress must be on process rather than information since this is an age in which the total volume of scientific information is doubling every 8 to 10 years and in which 90 to 95 percent of the scientists who have ever lived are now alive.

Both the undergraduate research and the independent study programs of the NSF are aimed at the needs of the more able undergraduate majoring in science and are quite clearly in the area that is generally identified with departmental honors.⁷ They are specifically concerned with bringing students into working contact with creative scholars. During next year, over 500 grants totaling about \$4.5 million will provide support for about 7,000 undergraduates working in a variety of disciplines. The program is reported to be working well in developing scholarly ability among able undergraduates, but in some institutions the necessity for the student to choose between science subjects and professional education courses is a limiting factor in terms of the number of qualified teachers the program helps to produce.

In general, then, there is obviously a trend toward a quality emphasis at all levels of education; and institutions and organizations are working to find the best ways to implement it. Unquestionably,

⁶ Additional information is available from Charles R. Keller, Director, John Hay Fellows Program, 9 Rockefeller Plaza, New York 20, N.Y.

⁷ A grant on July 27, 1962, of \$89,100 to ICSS from National Science Foundation indicates its conscious concern with the educational role of honors programs in the sciences, the quantitative social sciences, and allied fields such as engineering and medicine. This grant is for investigation of and publication on four specific projects: (1) The value of research participation and independent study for the intellectual development of the student; (2) the teaching of science to non-science majors, particularly those in honors; (3) the meaning of "honors approaches" in laboratory exercises, sections, courses, situations; and (4) interdisciplinary approaches, particularly in honors, in the natural and social sciences.

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this emphasis upon quality may in itself help to attract superior students to the teaching profession, thereby adding to the momentum of the trend. The extent to which these students will choose to go into teaching will be influenced to a great extent by the career opportunities open to them, as we shall see in the next section.

Effect of Honors Programs on Recruitment and Retention of Teachers

Just as it is important for gifted children to have leisure and time to think, to plan, and to explore, so it is important for teachers to have time to think and to plan and some leisure time for personal and intellectual development and recreation.—Merle L. Borrowman, *University of Wisconsin*

Career opportunities, salary, and working conditions are crucial factors in attracting good teachers. The importance of each of these factors, of course, is relative to other opportunities in the area. In the high school at Oak Park, Ill., for example, there are levels in the salary schedule for those with the B.A. degree, the M.A., and the M.A. plus 30 hours. A regular classroom teacher reaches the top salary in about 14 or 15 years. In every 5-year period, the teacher is required to earn 6 hours of graduate, professional-growth credit. In the board's evaluation of this credit, however, writing, participation in professional organizations, committee work, or travel may be accepted in lieu of regular university courses. Relatively speaking, Oak Park is considered in a favored position compared with many other places in the country. Almost half of the staff are at the maximum in the salary scale, which is some indication of their satisfaction. The community is education-oriented, and it is not difficult to sell ideas to the community when they concern improvement of the schools. More than the average number of parents have been to college, and they give support and cooperation. The honors program, which extends throughout all the departments at Oak Park, is thought to be helpful in attracting teachers with qualifications superior to those who might have been attracted in years past.

Opportunities in the elementary and secondary field have become more and more favorable in recent years. There is not the minute scrutiny of personal lives that was characteristic in the past. Many of the extracurricular activities requiring teacher direction and supervision now involve salary adjustments to compensate for extra hours

of service. In some States, the total pay compares favorably with that in the colleges. In a good elementary school today, the honors graduate might find real opportunity, either in teaching or in administration, equal to anything he might find in college work or in high school.

In general, the school system which has the greatest possibility of attracting superior students into teaching careers is one in which administrators are intellectually awake and have dynamic interest in the quality approach in the schools; where certification requirements and salary and placement practices favor progress over conformity; and where the individual teacher's capability, self-confidence, and self-respect are esteemed, not only by fellow teachers within a specific school but also by professional colleagues at the various educational levels and by the citizens of the community.

Economic Implications

The real question is whether or not we in this country are going to support our schools in such a way and to such an extent that there can be the right kind of working conditions for really excellent teaching and learning. . . . When we talk about real excellence in the schools, we are talking through our hats unless we are willing to invest a considerably greater amount than we do now.—J. W. Maucker, *State College of Iowa*

Provision of special programs for superior students must rest on fair assurance that the schools will have the kinds of working conditions that make it possible to carry on at an intellectual level consistent with honors work. Granted adequate support, the potentialities of such programs—indeed, of the whole of education—are unlimited. But the fact is that we as a Nation do not make ourselves invest enough in education. It is true that expenditures for education have more than doubled in the last 10 years, but we have not increased the proportion of our resources per pupil in that time. We are spending about 3.5 percent of our gross national product on formal education at all levels—elementary, secondary, higher education, public and private. This is up about half a percent in 10 years, but enrollments have risen equal to that. Many feel that we ought to double our national investment in education, and that we are not going to do a really better qualitative job until we recognize this squarely.

Scholars have a moral obligation to speak out for increased excel-

lence and for adequate support to bring about the conditions conducive to this excellence. Until educators and scholars recognize the relationship between support for the schools and excellence, they cannot very well expect the public to see the relationship; and unless and until the public sees that relationship, they will not increase the investment in education.

Questions of great relevance are being raised about the talent loss among the economically and culturally handicapped.⁸ What are the relationships, for example, between talent and income level and between motivation and family culture? What can be done to enhance the emergence of talent among the disadvantaged and to prevent the erosion of talent once it has been identified? Actually, programs for superior students should have no implications of elitism. The approach to the identification and development of the talents of superior students should also be effective in helping to raise the quality of education for the entire student body.

Education for superior students is not simply a continuous cycle starting with the identification and provision for talent at the elementary level and allowing for similar special programming at each successive school and college level, after which superior students become teachers of bright little ones. It is a matter of identifying talent at whatever level it emerges. In the North Central Association Superior and Talented Student Project, a deliberate attempt was made to initially identify schools that had a sizable pool of talented youngsters not being challenged. The project—now an interregional one—in working with secondary schools found that latent talent must be identified earlier in the life of the individual, particularly if he comes from an environment which does not positively value high academic achievement. Honors work in college may be too late for many of the youngsters who, with upgrading and lifting of the sights, may be among our ablest students.

Students who have had honors experiences in the colleges and universities should be able to go back into the secondary and elementary schools and identify other talented young people who do not come from environments likely to produce high motivation. They should be able to work in situations that do not yet have programs for talented students and help create the conditions in which such programs can flourish.⁹ Given adequate support, there is no limit to the heights in education to which the quality approach can lead us.

⁸ James Bryant Conant, *Slums and Suburbs*, New York: McGraw-Hill, 1961; Patricia Sexton, *Education and Income*, New York: Viking Press, 1961; and *Education and the Disadvantaged American*, Report of the Educational Policies Commission of the National Education Association, Washington, D.C., 1962.

⁹ Hunter College recently received a grant from the Federal Government for a program to train teachers for schools in the slum areas.

V. Conclusions

We ought to think of honors programs more as a way of life and scholarship for students rather than as a particular mode of administrative organization. Through the honors approach, we must create conditions that make possible this way of life. This takes the focus off any particular kind of methodology and places it in a goal.—Lindley Stiles, *University of Wisconsin*

Compared to the granting of earned degrees "with honors," which has long been a relatively general practice among colleges and universities, the offering of "honors programs" is a relatively recent development. Indeed, more than half of the honors programs currently in use have been inaugurated during the last 10 years. Just as most innovations in education take hold slowly and gradually build momentum to the extent that they prove valuable, so it has been with honors programs and the honors approach. Although most honors programs have passed through much of the initial period of exploration, there is still no one crystalized, formalized conception of what is intrinsic in honors, whether in the liberal arts, in professional education, in other professional fields, or in the performing arts. Certainly, improved quality of learning by superior students is the one pervading purpose of honors programs: the conceptions of quality and of the methods of achieving quality are almost as varied as the institutions themselves.

While institutions must not lose their power to attract and challenge good minds by overstressing means and methods to the neglect of content, still they must find the best possible ways to break the academic lockstep in order for each student to progress as far and as fast as he can.¹ This purposive flexibility is important for all students, but it is especially vital for the gifted or superior student, whose development may not be challenged by programs designed for the average. Recommendations of ICSS regarding the major features of a full honors program have been given in the introductory statement of this publication. However, the inauguration of an honors program need not await full implementation of every recommended feature. It can be

¹ Charles C. Cole and Ladora G. Lewis, *Flexibility in the Undergraduate Curriculum*, Number 10 of the *New Dimensions in Higher Education* series, Washington: U.S. Government Printing Office, 1962, 57 p.

started in a small way and move in the direction of a full program as fast as is feasible in the institution.

Special sections, special courses, and special provisions for independent study are typical of honors programs. Advanced placement and acceleration, where appropriate, contribute by helping the student to avoid unnecessary repetition, thereby leaving time for increasing the breadth, depth, and scope of his learning. Taken individually, the numerous practices in use by colleges and universities in dealing with superior students may or may not be part of an honors approach, depending upon a number of interrelated factors. It should also be acknowledged that the honors *approach* may be used with students whose work is not up to the quality normally required for honors, but care must be taken not to dilute the program by sacrificing substance for numbers. *A true honors program is directed toward that combination of approach and quality which leads the best students to do their best work.*

There is a general movement toward the quality approach, not only in colleges but in the elementary and secondary schools as well. This movement is giving American education a broad lift, not just one narrowly channeled toward an intellectual elite but one directed toward the recognition of the ability discoverable in all socioeconomic groups, with stress on values and goals wedded to knowledge. Already, the impact of emphasis upon quality in the elementary and secondary schools is leading to flexible progression at all levels and in some cases to the upgrading of entire courses or areas. In this way, there is avoidance of unnecessary repetition; and students are released for work appropriate to their greater readiness. Curriculum reforms in mathematics, sciences, foreign languages, and other areas are moving away from the mere accumulation of facts toward the complex approach which is typical of honors programs. To the extent that adequate financing is available, the honors approach is increasingly being extended to the regular program.

The profound implications of the teaching-learning process, which were earlier given attention by John Dewey and A. N. Whitehead, have more recently been raised by Jerome Bruner's report in *The Process of Education* and Nevitt Sanford's *The American College*. Honors work deals with knowledge, of course; but more than this it deals with the use of knowledge and the discovery and application of new knowledge. The honors approach to content and method is intended to give the student the kinds of experiences which will help him throughout life to make critical decisions and wise choices in the face of changing conditions, changing demands, and even changing knowledge.

The following statements, which combine conclusions and recommendations, have specific reference to honors programs but in many instances might well be applied to education in general.

1. The quality of our schools depends, in the last analysis, upon the quality of our teachers. Since teachers tend to teach as they have been taught, it is important that candidates for the teaching profession have the best possible learning experiences so that they, in turn, will be able to capitalize on those experiences in attempting to provide effective learning situations for their students. For this reason, institutions which prepare teachers should be encouraged to consider ways in which they can inaugurate programs with the honors approach. Initially, this should involve, as a minimum, honors *programs* for the best students. To the extent that the institution can finance such programs, the honors *approach* should be extended to other students as well.

2. Certainly, programs of honors quality can be an important part of the systematic recruitment of able and professionally promising students into the teaching profession as a first choice rather than as a last resort. Since the recruitment and training of able teachers is a function of each college or university as a whole, not just of the education faculty alone, members of all departments are urged to cooperate in the development of honors programs for teachers. This means that the work of the general honors program, the subject major, and the professional education courses should be sufficiently coordinated to create a sense of continuity in the honors experience of the student. The cooperative planning between faculty of subject disciplines and those of education contributes to fertile exploration of the methods, content, and goals of education.

3. Because education is a continuous process, there needs to be a partnership among teachers at the various levels so that college teachers know more about what and how students have learned in the schools from which they come and to which teacher candidates will return as teacher-scholars when they are ready for careers. Such partnerships are valuable in three important ways: They provide insights which contribute to improvement of the actual teaching-learning situations of teacher candidates throughout their college careers; they are useful in determining practices with regard to flexible progression and admission of students to honors programs; and they are necessary as background for effective advising of students.

4. The proportion of students in honors programs at any given college or university is likely to be a reflection of the overall admissions policy and the financial support which the institution is able to give to programs with the honors approach. If the threshold to honors

programs is made too low, in order to increase numbers, quality may suffer. Especially in the initial stages, it is better to err on the side of high selectivity, with a limited program to assure quality, than to risk mediocrity in an effort to accommodate large numbers of students.

5. Selection of students for honors programs is complicated by the fact that women seem more mature than men at the beginning of college, although the number of men and women in the superior ranks is about equal by the senior year. There is need, therefore, not only for further study of problems related to criteria for admission of men and women students to freshman honors work but also for objective information to be used as a basis for realistic counseling of men and women honors students as they prepare for careers.

6. The quality of the learning experience itself depends upon the philosophy, the enthusiasm, and the skill of individual instructors, and upon their teamwork and dedication to the planning and implementation of the total program. Unless the program can be adequately budgeted, especially in terms of staff, it should not be undertaken with the expectation that it will then flourish. Yet there is always a reasonable prospect that an initial sacrifice of time by dedicated faculty may bring funds needed for continuation.

7. Honors programs have been and will continue to be proving grounds for many of the emerging practices through which teaching-learning experiences of all students are being improved. For this reason, agencies that provide funds for educational improvement should be encouraged to make grants for the development and evaluation of programs with the honors approach in order to supplement what the institutions themselves can afford to do. Furthermore, it is not enough simply to support programs of honors quality within the institutions preparing teachers; there must also be support within the elementary and secondary schools in order to attract and hold in teaching positions as many as possible of those bright young people who are able to identify emerging talent in rising generations and challenge and nurture its development.

8. Careful and objective appraisal needs to be made of experimental programs, and on a systematically recurring basis of established programs, first in terms of student response and achievement while in school and second with respect to the efficiency of the teachers produced. Such appraisals must take into consideration certain contributing factors. For example, to accommodate differences in learning rate, new measures of accomplishment are needed to supplement or replace the emphasis which the traditional credit hour places on time

spent in class;² and certification requirements need to be modified in some States to guarantee quality without imposing unnecessary restrictions through formal course requirements which limit the time students have for breadth and depth of study.

9. Regardless of the pattern which the honors program may take, advising of students makes a significant contribution to the honors climate or atmosphere. Responsibility for performance of the advising function should, therefore, be precisely established so that every honors student knows to whom he should go for the assistance he needs. Advisers of honors students in education find their work complicated by the fact that men who are in honors programs frequently look toward college teaching as a career, although there is an increasing demand for their services in elementary and high school positions. On the other hand, women in honors programs may be fully capable of teaching at the college level; but there is an open question about whether or not many should be urged to do so in view of the discontinuous nature of their careers and society's predilection toward placing them in teaching positions at the lower levels.

10. The ICSS is an effective channel of communication about practices used in programs of honors quality in higher education. Other channels include conferences, regional and national meetings, and the literature of such organizations as the American Council on Education, the American Association of Colleges for Teacher Education, National Council for Accreditation of Teacher Education and regional accrediting associations, the National Association of State Directors of Teacher Education and Certification, the National Education Association and its affiliate bodies, State teachers associations, the American Federation of Teachers and other independent teachers unions, the American Association of University Professors, the National Society of College Teachers of Education, and the U.S. Office of Education. Through the cooperative endeavors of members of the teaching profession, professional associations, and official agencies, programs of honors quality can be encouraged in order to insure maximum development and utilization of talent at all levels.

By doing the best possible job of educating and utilizing the talents of the best students, especially in teacher education, our Nation can ultimately raise education to new heights.

² Laura G. Lewis, *The Credit System in Colleges and Universities*, Number 9 of the New Dimensions in Higher Education series. Washington: U.S. Government Printing Office, 1961, 37 p.

Appendix A. Conference Addresses

Between the Conception and the Act

E. W. STRONG

Chancellor, University of California, Berkeley

I believe that we will find ourselves in general agreement on purpose to be consummated in seeking to develop honors work in the preparation of teachers and thence in the schools. General agreement may be less easy to reach on desirable ways and means of effectuating purpose. In considering what ought to be done and how to do it, we will need to keep feasibility in view throughout—the conditions without which success in the honors undertaking is not likely to be had. For it is not enough to be agreed on purpose and agreed on means of effectuating purpose. We can be agreed that we want to bake bread and that it takes yeast to make leavened bread. Do we have the yeast? If not, how may it be procured? It will not profit us to mix the dough if we cannot get the lump to rise. Our tasks, then, are not only those of exploring the ends to be sought and the means to those ends. We shall also be exploring the conditions requisite for mounting and sustaining honors work and honors programs.

Development of Honors Work

The most talented students are capable of the best work. The sooner they are identified and provided with opportunity to make ample use of their talents as they mature, the more they will encompass and master in the years they spend in formal education. It is the aim of honors work to enable the best students to do the best of which they are capable.

These best students differ in degree and not necessarily in kind of capabilities from their companions. So, too, the intellectual fare of students in an honors program differs in degree and not in kind from the fare of those who fall short of qualifying for honors. Some of those who have not amassed a grade-point average specified for admission to honors work will be more independent intellectually, more curious, creative, and searching than getters of high grades. Selection made on the basis of grade records alone will miss the mavericks coming to the attention of individual teachers. The student with a special flair, the bright nonconformist, the individual who lets grades fall where they may while he devotes his time and effort to the study that interests him most—such student tests the perspicacity of an honors director or an honors committee engaged in selecting participants in honors work. Though the differences between better and best are differences of degree and not of kind, a scaling that is applied mechanically, a selecting that does not assess

each individual in depth will be defective in making qualitative discriminations.

An honors program rests on qualitative discriminations in selection of students, selection of faculty, and selection of particular modes of work. No department, school, or college would be in a position to undertake an honors program if it were not prepared to select and to do so effectively in respect to students, staff and instructional program. If, to attract excellent students and excellent teachers, an institution devises an honors program for which, initially, there is a lack of both excellent students and teachers, the laudable purpose is likely to falter and fail. If initially, the ground must be prepared before a more intensive cultivation is feasible, the honors' purpose sets an eventual goal to be reached and affords guidance in moving toward that goal. The first steps are then honors directed but are not yet in full measure pitched at the level of excellence that should be attained to be properly characterized by the name of honors.

An example may serve to make more explicit the situation with which I am here concerned. An institution wants to do better than it has done in the educational opportunities afforded its most capable students. Its admission and performance requirements are such that the spectrum between the most capable and the least capable students is quite wide. With large numbers of students enrolled distributed over courses of instruction, these courses have had to be held to a middle-of-the-range level of competence. The best students have thereby not been well served. Indeed, it may be the case that more attention and time have been devoted to the marginal students than to superior students, simply because the latter have done well in grades even though they are working considerably below their capabilities. In view of such a situation, the college decides, under the name of an honors program, to enroll the top 25 percent of its student body in courses of instruction reserved for this group. Thereby it will be upgrading the work done by the students in this quartile. It will not yet have exercised the selection which differentiates the highly gifted student from the above average student. Only as this selection is made do we arrive at the qualitative discrimination which sets off doing better with better students from doing the best with the best. The latter is the conception of honors that many colleges and universities are now adhering to in their honors programs.

The concern to do better with the upper 25 percent of the students is thoroughly commendable. It may even be imperative in paving the way for a further selectivity. An honors program has more chance of coming to fruition at an apex of highly selected students few in number in proportion to total enrollment, to the extent that it gains reinforcement by improved quality in courses open to a larger proportion. Unless there is support below a summit, an attempt to work from the top down is not likely to thrive. Either needed support is lacking in the work undertaken outside of honors courses, or else the honors program has to encompass many more courses than can be financed by an institution along with its regular courses of instruction.

Each institution of higher education will need, in its concern for excellence, to size up what it is in a position to do in becoming more selective of a portion of its students to which members of the faculty are assigned in a special program. There is no conflict of purpose in selecting the top one-quarter and then subsequently (or even concurrently if the situation is favorable) making a more exacting selection of five percent or less. What honors represents to the students and the faculty engaged, however, will be materially affected by what is embraced and what is not embraced under that designation. One institution's inclusion, if broad, will not be comparable with another's that has been quite limited.

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Moreover, if the student body within which a percentile proportioning into honors has been put into effect is one which has been selected already by high admission standards, this factor must also be taken into account in making comparisons. The University of California, for example, has now reduced admissions to the top 12.5 percent of the high school graduates. Were a 4-year honors program to be established, the students beginning the program in their freshman year would fall in the top one or two percent of the high school graduates. Put another way, if 1 percent of the top 12.5 percent constituted the freshman honors group, several hundred freshmen would be eligible for honors. Indeed 400 entered last fall at Berkeley who had honors at entrance, that is, high school records which consisted of not more than one B grade, the remainder being straight A's.

Whatever be the position in which an institution finds itself, it will have a complement of students which are its most capable to whom that institution can properly devote special attention. In so doing, it will soon recognize that its concern does not begin with these students at the time of entrance but reaches down into the high schools and, beyond that, into the elementary schools. The recognition brings to the fore a vital role that departments, schools and colleges of education have in their preparation of teachers for these lower schools. If those engaged in teacher preparation have not brought their own best-qualified students into honors work, they will not be furnishing a cadre of teachers who will carry the conception of honors into the schools to bring it there to fruition in practice.

The honors idea can be imparted to many by way of definition, specification, or description of what is meant when we speak of gifted students and special programs. To work effectively, however, with the most gifted students in English, mathematics, science, history, or other disciplines calls for teachers who have equipped themselves to challenge the minds of these students and to meet the challenges that they present.

If students enroll in a school of education for teacher training after they have completed work for the A.B. degree in a liberal arts college within which they have done honors work, the school is in a position to capitalize on this. If the school does not do so, it can expect dissatisfaction from the students. In colleges within which undergraduates preparing to teach in high schools and the elementary schools complete a major in education, there should be opportunity for honors work, at least in the senior year and, preferably, beginning earlier. Honors work that calls fully upon the intellectual resources of the student of exceptional ability develops in that student as teacher a fuller capability to repeat the process with his students.

Furthermore, it is reasonable to expect that engagements of prospective teachers with honors will wed more of them to teaching, for honors work is the antithesis of a routine performance of routine chores. Honors work is the work of inquiry to which teacher and student contribute. It fosters and develops skill in examining the answers given to questions by demanding evidence and reasons. It leads to examinations of the questions themselves and of the kinds of answers that are relevant to a scientific question, a moral or aesthetic question, a question about validity of reasoning, a question about truth or falsity of a proposition, a question about definition as distinguished from a question about causation, a question about facts and a question about interpretation of facts. Such examining ought *never* to be conceived as something reserved for honors work or peculiar to it, but such examining ought *always* to be characteristic of the work of students and teachers in an honors program.

With the best students and the best teachers, breadth and depth of inquiry will thrive best; but in the continuum of the educables and the educators there is no point at which we are justified in treating learning as merely a matter of rote in turning out ready-made answers to stock questions. The acquisition of skills of mind requires application and hard work, a doing and redoing necessary to the formation of habits in reading, writing, and reasoning. To be skillful and knowledgeable in the play of ideas, exacting practice is demanded. The person who wants to be a creative writer must first learn how to write by working at it.

For the ablest students, the tasks with which others have to struggle are easier to perform. Time and again, the greater labor expended carries the less gifted student further in accomplishment and in subsequent career than his more gifted companion. The fault lies with the more gifted student if he is lazy; but the fault lies with the schools insofar as they demanded too little and offered too little to their bright and restless students.

Within colleges and universities today we are becoming increasingly concerned with sorting out students on the basis of their capabilities for the sake of providing opportunities best suited to ability groupings. Thereby the institutions in this country are seeking to do something that has never been done hitherto in this or any other land. They are seeking to provide higher education for the many while, at the same time, placing an emphasis on excellence. To make higher education available to large numbers of students, a society must do what it can to furnish equality of opportunity. In recognition of inequality of capability, we have also the task of selecting the ablest students and advancing them as fast and as far as we can. Only if there is not enough financial support of education to permit both tasks—the task of educating the many and the task of devoting special effort to the very best—are we then faced with having to sacrifice one to the other undertaking. Given the means, there is no conflict or incompatibility between the end of educating the many and of serving highest excellence by providing the best for the best.

The present conjoint serving of two ends by the institutions of higher learning in the United States has only gradually come to realization. Down to the Civil War, the colleges and universities in this country drew their students from a relatively small segment of the population. An intellectual elite, represented in clergymen, doctors, lawyers, teachers, men of letters, and men of affairs flowed from these centers. In the Morrill Act of 1862, the Congress provided for the establishment of land-grant institutions in every State in the Union. Agriculture and the mechanical arts became subjects of instruction made available to students in State-supported colleges and universities. In the University of California, as in the other land-grant institutions, colleges of agriculture and of engineering became segments incorporated within a whole composed of a liberal arts college, professional schools, and graduate instruction. Today, the great majority of students are enrolled in courses of study leading to the bachelor of arts degree and, of these, increasing numbers go on to graduate work. The influx of students into colleges and universities after World War I and the current surge which will continue throughout this decade constitute, in numbers represented, the phenomenon commonly designated as "mass education." It should not be assumed or concluded that the press of numbers has been at the expense of quality by descent to a mass mediocrity. Private institutions of high excellence, under necessity to hold enrollments within the limit of their financial resources, have become more selective in their admissions. At no earlier time in this century have their student bodies been of higher excellence. The publicly supported institutions, by a hierarchical distribution of tasks and responsibilities,

can match the best private institutions at one end of the ability-range while, at the same time, extending educational opportunity broadened out to a wide base.

Ways and Means of Furthering Honors Work in Schools of Education

The general question to be raised is the following: Are there, in the tasks which fall to a school of education in the preparation of secondary and elementary school teachers, certain features or characteristics pertaining to its professional orientation which call for ways and means of developing honors work somewhat different from those appropriate to honors in a liberal arts college?

This general question introduces an array of more particular questions. Should different criteria of selection of students, of courses, or of faculty be used? Should the honors program of the school be a continuation (or extension) of honors work done earlier in the liberal arts college? What does an honors program in a school of education need to encompass to recruit able students for teaching careers? Should the school seek to be highly selective in admission of students to honors or should it seek to bring a substantial number of students into the fold? What kinds of courses should be included in the program, and what would constitute the differentiating characteristics of these courses in comparison with regular courses? Should honors courses in education be developed, where possible to do so, on an interdisciplinary basis? What courses should be of an interdisciplinary nature and what courses should be fully the responsibility of the faculty in education? Should there be somewhat different content, emphasis, or reach in honors work undertaken by students preparing themselves to teach in the high schools and by students preparing themselves to teach in elementary schools? Given the competition for grades and the more exacting demands of honors work, what will induce students well qualified for honors work to elect it? Or, putting this question another way, how are conditions established that will dispose both students and faculty to participate in honors work? Looking to end-results—the flow into the schools of teachers who have been student-participants in honors—what are the measures or tests we should use in evaluating the effective worth of their honors preparation?

These are some of the questions we are met to discuss. As my initial contribution to the discussion, I want to examine the couching of these questions. In so doing, I will advance suggestions, hypotheses, and considerations which appear to me to be ingredient to practicable and desirable solutions of problems insofar as problems are presented by the question. Not every question poses a problem, unless it be the problem of sifting out a question that embodies a genuine doubt or difficulty from a question that does not.

All of us recognize that, as work in a particular field of study reaches an advanced level, it takes on a professional character. A student with a major in history, English, or philosophy reaches this level as he approaches or enters upon graduate study to equip himself to be a contributor in his chosen field. As a teaching assistant or teaching fellow he gains apprenticeship experience in the classroom. In seminars, he is expected to perform as a junior colleague in presentation and discussion of research papers. There is no break in a continuity of study begun as an undergraduate and becoming more thorough and specialized during the graduate years. There is a movement from breadth to depth, a movement towards concentration for the sake of developing a mastery

as required and judged by experts. In small seminars and in the final stage during which the student works individually in close collaboration with one or more members of the faculty in the conduct of his research, relationships are established between student and teacher of the kind sought also in undergraduate honors.

The situation does not seem to me to be in any way radically dissimilar in professional schools and colleges with undergraduate curriculums. The engineering student or student in architecture has fewer electives during his undergraduate years and encompasses less in breadth of study in the social sciences and the humanities. Not until his junior year will most of his courses be taken within the professional department. Participation in honors work—whether it be in a campus-wide honors program, or in a program developed within the professional school or college, or in some combination, or by some moving over from general to departmental programs—will be animated by purposes in common even though somewhat different emphases are expected to be lodged in the particular disciplinary clusterings of students. These do not necessarily constitute a weakness and may indeed be a strength, especially in the third, fourth, and fifth undergraduate years.

Turning to schools of education in their tasks of preparing teachers, the tasks have generally been viewed as threefold in nature. First, these schools must see to it that those who are to teach in elementary schools or in secondary schools have gained a good competence in the subjects they are to teach. Second, they seek to provide an understanding of the learning process through psychological study, of the educational enterprise through study of the history and philosophy of education, and of the school in society through comparative studies. Third, they seek through methods courses and practice teaching to develop teaching skills to have these be exercised effectively. The latter two tasks presuppose the first.

In entering upon an honors program, are all three endeavors as represented in course-credit work suited for inclusion in that program? The first two appear to me to be entirely suitable for development of honors sections, honors colloquia, tutorials, honors theses, and interdisciplinary collaboration. I am puzzled to see how the last could or should be incorporated.

I have no doubt that a portion of the teachers being prepared will be found to be of superior ability and promise with respect to performance in classroom teaching. This will not be just a matter of a superior grade-point record but will also have to do with character, personality traits, devotion to teaching, ability to challenge students and to communicate with them, zest, patience, and insight. The source of my puzzlement does not lie here. It lies instead in the nature and role of practice teaching and of the courses in supervised teaching that are adjoined to this. Having gathered in a colloquium the most gifted prospective teachers, what would then be the honors work to be undertaken with respect to courses in the supervised teaching category? I am not here raising a question about need for or usefulness of these courses in the preparation of teachers. I am asking only if they are of a kind to lend themselves to honors work. In being devoted to achieving greater breadth and greater depth of inquiry, understanding, and appreciation, the work in honors should always be substantively lodged. It is so lodged in courses, seminars, colloquia, and tutorials or individual studies developed with respect to the first two tasks in an honors dimension. It appears to me not to be so

lodged with respect to the third task as this is carried out in courses of supervised teaching.*

If these courses are set aside as falling outside an honors program, I would then hold that the first two tasks do not embody any features or characteristics which call for ways and means of developing honors work in a school of education that would differ markedly from the ways and means appropriate in a liberal arts college. I would qualify this in at least one important respect. The development of a professional *esprit de corps* among teacher candidates, especially those of highest purpose, ideals, scholarly grasp, and teaching effectiveness, will be a leavening influence within schools of education and in the elementary, secondary, and collegiate institutions in which the individuals will subsequently do their teaching. The influence, I suppose, would also be exerted upon and within supervised teaching (arts of practice), stimulated by, and responsive to, a qualitative lift imparted by honors to professional practice.

Thus far I have indicated how I would answer the general question—the question asking whether or not the professional orientation of a school of education calls for ways and means of developing honors work differing substantially from the conduct of honors in a liberal arts college. My answer was in the negative. If an honors program has already been instituted on a campus and if participation, continuation, or extension of that program is being sought by or within a school of education, then the motif should be *more of the same work of inquiry*. This “more of the same” could well be toward greater depth where, earlier, the students had done honors work in breadth. To attract these ablest students, a school of education must offer to them a like kind of intellectual engagement. An easy but fatal mistake would be made if one substituted exposition of honors work for the *doing* of honors work. The exposition could consist of courses entitled “Principles of honors work,” “Theory and practice of honors,” “The honors curriculum,” “Criteria and methods of identifying and selecting the superior student,” “History and philosophy of ability groupings,” and so on. Such courses might or might not be, in the way in which they engaged the students in the work undertaken and in their substance and quality, of the kind and calibre deserving the name of honors work. They will not be this if they are didactic discourses about honors. The king who wanted geometry delivered to him was properly told, “Sire, there is no royal road to mathematics.” Honors cannot be taught, even though attention can profitably be given to ways and means of developing honors work.

A school of education might not develop its honors courses on an interdisciplinary basis or by interdisciplinary collaboration; but unless the courses are of a kind suitable for or suited to, such interdisciplinary development, they are not the right kind of courses. Each faculty member participating in an honors program will bring to the work he does in that program his own fund of interest and knowledge. Thus a member of the education faculty conducting an honors course in which the students are teacher candidates will have a double interest. There will be the interest in so conducting the course as to have it embody and exemplify performance of higher quality. At the same time, the particular composition of the group introduces the further profitable task of self-analysis in appraising the performance. In doing this, the students preparing themselves to be teachers and looking forward to work

*The position taken here by Mr. Strong was discussed at length during the conference. In order to present both sides of the debate, the verbatim transcript of this discussion is given as Appendix B.

with superior students in elementary and secondary schools become engaged in measuring and testing the worth of such work.

It is surely desirable to have an increasing number of teachers in the schools who know what honors work is by having done it themselves. If the threshold into honors is lowered to increase numbers, quality will suffer. Since it will take excellent quality in an honors program in its staffing and content to draw excellent students to it, I believe it would be a mistake not to be highly selective, even though the numbers enrolled in the program are initially very small. Well begun will help insure best done thereafter. Moreover, recruitment of faculty for participation in honors work is most likely to prosper where the demand for quality is pitched high. Like will attract like. The time and energy that will need to be devoted by the participants in working with superior students in an honors program cannot be had from them by way of addition to an already full stint over any considerable period. Unless the program can be budgeted to provide for the proportion of time devoted by a faculty member to honors, the program should not be undertaken with the hope that it will then flourish. It might be undertaken by an initial sacrifice when there is a reasonable prospect that its results will bring to it the funds that are needed for continuation.

We cannot afford to do less than the best for the best students. Lest we be accused that this is an article of faith rather than a proposition proved by results, every honors program should be so mounted as to provide measures and tests of its efficacy. Embracing the purpose and devising the ways and means of effectuating the purpose residing in honors programs, we shall want to know the fruits of our labors. In education, as in other human enterprises, fads and fashions can exercise a sway which sweeps well-intentioned and initially well-conceived efforts to extremes that we have afterwards to repent and repair. Recognizing that programs bearing the name of honors carry with them an honorific connotation, we must be vigilant to have this be fully deserved. For if we have not honored honors by doing the qualitative job that is signified by the name, our zeal will have been mispent and we will be convicted of doing only lip-service in this cause. Between the conception and the act falls the shadow if we do not supply the substance. It is our task to supply the substance.

The Threat of Honors

JAMES L. JARRETT

President, Western Washington State College

The title of my talk is, of course, a bit of a trick. When Joe Cohen asked me what I was going to talk about, and I told him, he said, "Fine, sounds interesting." Then he did the second take: "Threat of honors?" he growled. "What's *that* about?"

Still and all, I think the concept "threat" will enable me to unify or at least to yoke together with minimum violence a string of cautionary remarks about honors programs. Those of us who are true believers like to get together on occasions like this to testify in behalf of the gospel according to us. We listen politely, if impatiently, and a little incredulously, to the testimony of others, in order to be able to tell how we manage the matter in our own parish. But there are heathens, and there are pitfalls. Let us take heed.

I remember with a certain acerb clarity the first occasion in which I, flushed with achievement, reported to a group of high school principals that at our college we had at last launched a small but altogether genuine honors program for those in the upper few percent of our freshman class. I concluded my speech with the justified expectation that, even if my rhetoric had limped, my message had had sufficient brilliance to shine through, and that I would now enjoy a small parade of congratulations. But it soon became clear that the parade had turned down another street. What I heard, instead of applause, was a reserved silence, broken only by some distinctly sour remarks. Even more characteristic, however, was this comment on the part of one principal: "This is all very well, to provide for that little elite, but what about the good average student? What are you doing for him?"

Now this is not necessarily an unfair question. It must be admitted that it is theoretically possible for a college with a heterogeneous student population unfairly to neglect the weaker students. One sometimes gets the impression that the larger public universities, in those States where the sons and daughters of all taxpayers are deemed admissible, tend, in sheer desperation, to become ruthless, hardening their hearts to the tune of an actuarial life, to drum out, term after term, the hordes of the proven unfit. However, even if there be such dispensers of icy justice, surely the typical story is far otherwise, with batteries of counselors, psychological and otherwise, reading clinics, remedial courses, special tutoring services, elaborate warning systems, and even a prevailing belief among the arrangers of lower division programs that the primary challenge is to find a group of courses, *any* group of courses, that the weaker student can pass. We all know that considerable amount of faculty ingenuity is squandered on this task, and by no means entirely in behalf of athletes.

We know, too, that provision for an honors program does not normally mean robbing slow Peter to pay bright Paul. We tend to believe that an honors program tones up the whole establishment, but it is not my principal purpose here

and now to say this. For one thing, it does not need saying to those who attend this kind of conference; for another, I am mainly interested in our looking squarely in the eye of the opposition, of the unconvinced.

Now, I believe that this dubiety concerning favored treatment for the bright is especially to be encountered among public school administrators and teachers, who are used to the compulsory education of all, frequently with a minimum of grouping, lest some be stigmatized as second class citizens. The argument is familiar to us all, but its familiarity, perhaps even its banality, should not blind us to the fact that this is the working creed of a significant number of educators.

I recently became aware of a widely used teacher placement form that provided for the marking of nearly every imaginable characteristic except intellectuality and academic excellence. This is not entirely an accident. There is still a widespread suspicion of the intellectual and bright elementary and secondary teacher. Like the highly gifted pupil, he may be an articulate critic of the establishment.

But it goes beyond the public schools (where, of course, it is not the unanimous opinion): it is present in our colleges and universities, too. It may be indigenous there, or it may come from the public schools. Let us not forget that professional educators are *unusually* sensitive to the winds blowing from the elementary and secondary schools—far more so than is commonly recognized outside these ranks. If a high school principal gets uneasy about a college honors program, a college professor of secondary school administration shifts in his seat.

This, then, is a threat. Honors programs threaten a certain group strongly egalitarian by tradition and possibly a little suspicious of the high IQ students and the intellectuals, especially if they are a little unruly. The oft told story of the teacher who boasted that by the end of the year she usually managed to speed up the very slow and to slow down the very fast borrows its slightly grim humor from a prevailing practice. We are more accustomed to locating anti-intellectuals among other segments of the economy, but we will, to our peril, ignore their presence in the school and colleges.

A second group who may react to a certain threat in a proposed or an existent honors program are the college administrators charged with making the books balance. The point is simple, and I shall not try to complicate it. Honors programs, if they are much good, are expensive. Right now, there is, though we superstitiously avoid recognizing the fact in public, an unprecedented degree of affluence in higher education. But it is possible, even for one not constitutionally gloomy, to foresee distinct possibilities of harder sledding ahead. When this happens, when, that is, instead of another sizable increase in our appropriations or in our endowment funds, there suddenly develops a shrinkage, the costliness of honors programs will become more apparent. At that point it will become necessary to defend them, not as the cherry on an already rich sundae, but as a necessary mineral in the educational diet.

Even before this happens, the faculty may be threatened by an honors program, when such is endorsed in principle, even with enthusiasm and flourish, but with no adequate allowance made for its staffing. At my college, we did ask the faculty, or rather the faculty asked of itself, to take on honors courses as overload for a one-quarter trial period. Then we moved into a partial underwriting of the program for the first full year, and now we have made what I believe is a fair allowance for participation in colloquia, tutorials, and the administration of the program. A faculty or administration contemplating an honors program may be well advised realistically to plan ahead against the threat of honors as just overload.

The students, too, may feel threatened by an honors program, and here I have in mind bright students who are, as they may in these days be well advised to be, grade-conscious. How often does it happen, I wonder, that a highly promising student decides not to enter the program because of a fear, possibly even justified, that his grades may suffer thereby. The answer, I take it, lies in guarding against any inflexible employment of a normal curve which by definition does not apply to abnormals. But, as in so many activities, it is not sufficient just to do the thing; one must also give adequate publicity to the thing done. Potential honors students, who are, I take it, not forced to enter the program, must realize that the usual grades in honors classes are A's and B's, and that the consistent C student there is probably misplaced.

I have mentioned four groups who may, and who upon occasion do, regard honors as a threat: a certain group of educators whom I mainly associate with public schools, college administrators who are willy-nilly budget-minded, faculty members for whom participation in the program is a serious overload, and students who worry about grades. I should like now to raise my eyebrows at three practices which I think may be said to threaten the quality of honors programs themselves, unless they are kept in mind and properly accounted for.

First, I should mention the kind of honors program which is created more by schedule makers than by imaginative designers. The practice is even more familiar in establishing so-called general education programs. You know, one simply checks off a number of existent courses listed in the catalog and then says, any two of this group, 12 hours in that, and either X, Y, or Z. This saves all the trouble of interdepartmental collaboration, and courses prepared especially in the interest of general education. One can also offer, say, American studies programs in this way. One already does teach American history and American literature, possibly American philosophy too, and of course, American government. Two pages in the catalog are a small price to pay for bunching these current offerings into what gets announced as a new program in American studies. Similarly, an institution perhaps a little self-conscious about not having an honors program, or a little cramped for money, time, or energy to create a program, may fabricate one with the help of scissors and pastepot. But a program that is nothing more than a series of earmarked sections from multisection courses can be called honors only by courtesy.

My second point is one I announce with some temerity and certainly with uncertainty. However, I'd like to register my impression that in our selections processes, the ways in which we identify the students admissible to the program, we may sometimes overdo "potentiality." Of course we may overemphasize grade-point averages, too, in high school or college, as indication of probable success in honors, but the dull A student is perhaps better recognized than the unintellectual student of high IQ. I certainly do not want to give the impression that I underestimate the power of honors to awaken the intellectual interests of the gifted-but-lethargic, but I sometimes feel that a word needs to be said for the student who is, by the usual measures, not *quite* as bright as the brightest yet who gives evidence of that genuine interest in ideas that marks the conduct of every good honors program I have encountered. When the competition is severe for admission to the program, I would urge that demonstrated intellectuality be given full marks.

A third point concerns the format of honors colloquia and tutorials. Not long ago I expressed to our honors director my wonder about whether, with every colloquium leader devising long, long lists of reading for the youngsters, we might be teaching them to forget ~~how~~ to read *slowly*. I mean, of course,

how to read painstakingly, word by word, instead of just getting more practice in that also valuable art of judicious skipping. Maybe there ought always to be provided one or two colloquia where intensive, rather than extensive, reading is required, where one book or maybe even one essay, one short story, one poem, is taken apart and reassembled with loving and meticulous care.

These are my three threats to optimal quality of the honors program itself. Others could, of course, be mentioned. For instance, there is the serious matter of inadequate attention paid to the selection of the honors teaching staff. However, I would like to conclude with a different kind of problem, one which I have seldom heard mentioned. I refer to the place of honors in professional education itself. I do not mean, now, just in the subject-matter major or minor of the teacher education student, but in the professional part of his preparation. I will confess that I am not as impressed as I once was with the role of the liberal arts snob, the one who, whatever his own teaching practice might indicate to the contrary, loudly affirms his belief that all those and only those who concentrate their full attention on their subject matter specialization become good teachers. I think I am well acquainted with the weaknesses of the usual education courses and I deplore them as much as anybody. But I wonder if this does not constitute a special challenge for honors. How can we seriously deny that there are immensely complex and immensely important questions—ranging from learning theory to school organization, from history of education to methods of evaluation, from the methods of teaching elementary arithmetic, which we have lately learned to be an amazingly sophisticated subject, to philosophy of education, altogether too often an amazingly naive and empty subject?

Programs in professional education for the highly gifted teachers-to-be may well save some of them from leaving their chosen career, may provide models for upgrading the entire professional sequence for teachers, and may—just think of it—*may* make better teachers of those who can stand the pace. I have concluded, perhaps by cheating, with a promise rather than a threat.

Oases of Excellence

LINDLEY STILES

Dean, School of Education, University of Wisconsin

Honors programs for prospective teachers can become oases of excellence in the dry and strife-torn deserts of teacher education. If they are well-designed and properly carried out, they can become invitations to teaching to the most outstanding young people, the people with the keenest minds, who are the most concerned about doing something worthwhile with their lives, some of whom have heretofore shunned the profession. They can also lead to the improvement of teacher education itself.

The objective of honors programs is twofold: first, to provide work in teacher education that is intellectually exciting and challenging to bright students; and, second, to produce teachers who are personally and professionally prepared to carry the banner of excellence to elementary and secondary schools.

Honors programs require a high degree of cooperation on an institution-wide basis between professors of education and professors in other schools, particularly in the liberal arts—professors in those fields that provide the major and minor specialized work. Institutions that do not have this are not going to be able to provide the kind of synchronization that has been discussed at this conference. Fortunately, we have made rapid strides in moving toward cooperation in many institutions. Within the last 5 years, over 200 institutions have introduced honors courses. This is rapid and dramatic progress. Already about a score of these are doing something about honors programs for teachers. This means that we are beginning to add the dimension of honors to the pedagogical phase of teacher education. I think this is the key. I am inclined to agree with Mr. Strong that we have to prove that we can apply honors to the laboratory phase of the work. My own inclination is to place this phase in a fifth-year program.

Although we are talking about dry and strife-torn deserts, I want to say that pedagogy is not entirely responsible for all of the dryness in these deserts of teacher education, even though it has been made the sole scapegoat of disrespect and sometimes of contempt. We have had brilliant young people who became teachers in the past, but their general education and their specialization in subject fields has often been woefully deficient. Not all teachers practice what they teach, even the gifted ones. Composition teachers do not write; history teachers are not historians; science teachers are not scientists; and foreign language teachers by and large are not necessarily good ambassadors for the cultures that they represent for students. You find exceptions to this indictment in a few fields—and at times in all fields. Often you find exceptions in fields such as art and music. But the truth is that programs of teacher education, even when they deal with able young people, are not producing for elementary and secondary schools enough teachers who are highly creative and productive scholars. Nor are bright teachers always the best examples of

citizens or professional leaders. Too often they are immobilized by academic traditions, fettered by fear of change and experimentation, and submerged in a conformity to group rites and rituals. Courses in pedagogy, whatever their shortcomings, cannot be blamed for weaknesses in programs for teacher education that such behaviors reflect.

This is by way of saying that, as we build honors programs for teachers, we should, along with colleagues throughout our institutions, take a long look at the total honors program, not only at that in education. I know that a lot of us will be content just to have something we call an honors program, but honors programs have to produce *results*—both while the student is in school and after he graduates.

Elementary Teachers

One of the hardest problems will be providing honors works for students preparing to teach in elementary schools. In most of our institutions, we do not really give a college education to these people. Bright majors in elementary education, for example, do not carry academic programs that qualify them for membership in Phi Beta Kappa, and their methods courses are typically pitched far too close to the grade level for which they are being prepared. A heavy emphasis is placed on the actual performance of such elementary school skills as handwriting, arithmetic, geography, children's literature, arts and crafts, children's songs, games, folk dances, and nature study. This is what we call the "professionalized content."

Most of the criticism of teacher education or pedagogy today comes from elementary majors who are insulted by this kind of emphasis in their college programs. Such content can hardly be expected to appeal to bright students, usually women who yearn for the intellectual excitement of rigorous college-level courses that deal with substantive ideas, issues, values, and knowledge. As one student said to me, "It's quite a change to expect a student to make papier-mâché animals in one class and then go to a class in philosophy the next hour." This is wrong. Honors courses in pedagogy can correct this long-standing insult to the intelligence of prospective teachers by assigning for college study content that is intellectually challenging. This ought to be done for all students, but we should do it for the bright students. I submit to you that there is no way of making a course in children's literature a study in depth for a bright student. Familiarity with skills, subject matter, and activities appropriate for elementary school pupils—a necessity for successful teaching, to be sure—might better be allocated to the internship when prospective teachers are giving full time to learning how to teach. Mr. Strong has challenged us to tell him how we can make honors work out of this activity.

Women

Study needs also to be given to the appropriate uses of female talents in the field of education. Over the years there has been a steady decline in the proportion of high school teachers who are women, and a further decline is found in the use of women in school administration. The number of women holding high school principalships has diminished now almost to zero, and a decline at the elementary school level is also taking place. If you study the data now available

about the development and use of the talents of woman in our society, you discover that fewer women are now preparing for professions than 15 years ago, and this includes teaching. Teaching comes closer to holding its own with the ratio of women in it, but in almost every other field the number of women is dropping. Are the girls going to have to get out their bloomers and hatchets again to reclaim their rightful status in the world of education? Certainly honors programs will have to face up not only to providing intellectually challenging programs of study for women, but helping to determine how these talents will be used in the profession after they have been developed and made available.

Programs of college study for women, particularly for women who are preparing to teach and who are bright, should give serious consideration to the ways in which women should be educated. In this age of space and science, for example, are women being introduced appropriately to such subjects as mathematics, astronomy physics, and chemistry? I know that elementary school teachers by-pass mathematics and science almost completely, or they take a course such as Mathematics for Teachers. These are the greatest insults of all, suggesting as they do that teachers are not smart enough to study mathematics.

Next Steps

Now I want to talk about the next steps that should follow from this conference. I do not know how you feel, but I feel that this conference is one of the most exciting things that has ever happened in the field of teacher education. Here we are coming out forthrightly and saying that we want the best young people in teaching, something our society has never said before. From Benjamin Franklin's time right down, no one had the courage to say "We want the best as teachers." This conference is the first time that a group of teacher-educators has gotten together to say, "Can we plan programs that attract and prepare those who are the best qualified for teaching to become the best kind of teachers?" It seems to me that it is important that before we go away from this meeting we as a group visualize the steps that will carry the seeds of this conference all over the Nation, so that we can set up these oases of excellence in teacher education and thereby bring water to the desert that needs so much to flower if our schools are to do their job.

Evaluation

Honors programs are going to have to be appraised carefully and objectively, so that we know whether or not they are doing the job that we expect when we set them up. They must be appraised first of all in terms of student response and achievement while they are in college. I sometimes think that our appraisal of teaching is done pretty much on the basis of how it *feels*. I'm not quite a Diogenes—I don't even have a lantern, but I do look around for evidence that suggests that something is better than something else in this business of teaching. I've been looking the last 2 or 3 years for evidence about whether or not team teaching is better than the self-contained classroom teaching. You ought to see how we appraise it by feel. The reports say, "We've had team teaching going now for 2 or 3 years, and everybody likes it—the kids like it, the teachers like it, and the parents don't complain very much. We think it's pretty good." That's by feel. Well I think we're going

to have to appraise honors programs more than just by feel. We have to appraise them by how much people learn and by the calibre of teachers that they produce.

Certification Requirements

We must make sure that anyone who comes through an honors program can be certified without embarrassment or without a lot of letters written back and forth. Don't blame your problems on your State superintendent of public instruction. He's doing just exactly what he's been told to do. His program of certification is exactly what the people in his State, including those in the profession—the pedagogues and a few of the academic boys—have said he ought to do. Certification requirements, in effect, reflect the pressures that have been exerted on State departments of public instruction. As a consequence, they are often a hodgepodge of specific and unbalanced specifications that prohibit rather than guarantee that the States have good teachers.

Here's what I suggest: This group and others concerned with honors programs for teachers must ask State departments to set up machinery for accrediting or certifying people who come through honors programs. It's not very difficult to do. We are making rapid improvements in certification patterns. If you can get a teacher certified on the basis of examinations, as we've done in Wisconsin, you can get them certified on the basis of work in an honors program.

We must see to it that honors programs are fully understood by school officials, so that when we turn out bright teachers in an honors program their placement will be appropriate to their capacities. This means working with the administrators so that they know how to use these talents once we have developed them. And we must work with the profession itself—the various guilds and associations and all of the organizations to which teachers belong—to see that they support honors programs. This may not be easy to achieve.

Pitfalls

There is a real danger that honors programs will simply provide greater freedom for students and professors to cover the same content without achieving new educational goals. In effect, honors programs may become only bypasses to established courses in teaching methods that lead a student by a different route to the same destination on the highway of learning, without pushing him either significantly further down that highway or helping him to build a new and better road for his life's education. This is a danger.

I think that the pedagogues will have something to face up to on this, because we've been so certain about what ought to be taught that we've got it written into State law. We'll find ourselves setting up honors courses that just take the place of some course that's required by law, instead of saying that the honors student is bright enough to learn the material in a summer by reading a few books and should be pushed beyond the required content into some other courses.

There is danger that we may assume that the job of honors programs is to accelerate bright students rather than to improve their skills and expand their knowledge—to educate them better.

Another pitfall is that we may miss the creative students because, as you know, creativity and what we call intelligence are not highly correlated.

I shudder with fear that we are going to have designs for honors courses that become rigid and traditional to the extent that after the first flush of novelty wears off they will be just as sterile, confining, and stultifying to students as regular courses. I can just see us here at Wisconsin coming along with the brightest of all students who's one hour short of having his work in honors so that he would be called an honor graduate. You know what some faculties will be like. "Oh, no; oh, no. He didn't have that hour. He'll have to come back next semester and get that other hour in honors if he wants to be an honors graduate."

There is a tendency to select for honors courses bright young professors, and this in itself may be a danger. At the beginning of their careers, most younger members of our staffs are remarkable conformists. They want to be recognized, to achieve, to gain advancement in rank and salary. Their years of conformity as graduate students have prepared them for a type of acquiescence to academic customs and traditions that bring rewards in a faculty community. They will, of course, resist and oppose the dean and other administrative officers, especially in public—but this, too, I submit, is a kind of conformity, if not downright adolescence.

Young instructors, bright though they may be, may bring to honors courses nothing more than an enthusiasm for the chance to know bright students, to be friendly, and to enter into dialogues with them. Their endorsement of honors work itself may be a type of conformity to the responses of their faculty colleagues. Underneath their eagerness to be identified as honors course instructors, they may well be the strongest upholders of traditional patterns and procedures of college study. They may find it difficult to reject, for example, the image of the college student that they, yesterday, helped to perpetuate.

Such are a few of the pitfalls that I see. I mention these just because I wanted to get my aggressions out of my system—and because as we work along I think it's well for us to be advised about what is before us.

Conference Reflections

J. W. MAUCKER

President, Iowa State College

(Mr. Maucker was asked to make some extemporaneous observations on some of the issues raised during the first portion of the conference. The comments below are from the verbatim transcript of conference proceedings.)

Honors for Elementary Education Majors

The dilemma in providing honors for prospective elementary teachers is that, by virtue of the extreme breadth thought necessary in their programs, it is difficult for them to push far enough into any one subject to get to the level which seems appropriate for honors work. It is a real problem to figure out how to do this in a 4-year program. The suggestion of a major in the first 4 years and then an internship assumes a 5-year program; but we are just coming out of the woods on 1- and 2-year programs in many States. We must recognize that that's where we shall be for a while, although there is a good chance that we shall move on to 5-year programs in time.

We are, therefore, challenged to develop a 4-year program with the necessary breadth and still secure adequate depth for the honors student. It can be done. You see to it that the teacher (1) can handle instruction in reading, (2) has at least a minimum essential background in the social sciences, humanities, natural sciences and mathematics, and (3) has a concentration in a specific subject field built on top of the introductory courses. This probably could not be a full major in every case, but it could certainly be at least a strong minor. The extremely bright students could, however, elect enough courses so as to get, for all practical purposes, the equivalent of a straight liberal arts major of the kind that a secondary teacher takes. It may be made up of a somewhat different collection of courses in a given field, with some eye to the elementary teaching task; but it could have the depth necessary to qualify as a full-fledged, respectable major. This would be easier to do for those students who come to college prepared to exempt some beginning courses.

Bright students could then get into departmental as well as general honors. If there were honors courses in the professional education field, there would then be a full gamut of honors opportunities for elementary majors.

Honors in Practice Teaching

This leads me to Mr. Strong's question about honors work in practice teaching.¹ When we try to provide a tutorial kind of experience in which the stu-

¹"Guidelines for Preparation Programs of Teachers of Secondary School Science and Mathematics. Recommendations of the Teacher Preparation-Certification Study of the National Association of State Directors of Teacher Education and Certification and the American Association for the Advancement of Science," September 1961.

dent teacher is assigned to a very competent supervising teacher, possibly in a laboratory school, more likely in a public school system, we are aiming at exactly the kind of situation that Mr. Strong talked about—one where the approach is analytical and there is a concern as to what content and approach will be most appropriate. Method of inquiry and the attempt to evaluate results critically can most certainly be involved. If we are going to hand out some kind of accolade to those who have done honors work, the people who have done a really outstanding job in such student teaching or in the internship might very well be so recognized, without necessarily having to label the experience as an honors course.

Certification

The National Association of State Directors of Teacher Education and Certification is working with John Mayor of the AAAS in some studies on improving teacher certification requirements in the fields of mathematics and sciences. This national association is a channel for working out the problems of honors programs and certification. It ought to be informed on the need to modify interpretations of various certification laws to take into account the needs of honors programs. For example, it ought to be possible to obtain certification for a person who does not quite meet the requirements but has had in an honors program what, in the judgment of the institution, is actually a superior preparation for teaching. The so-called "Approved Programs Approach" is a way of doing this.

I am sure that the certification people would want you to know that they have themselves led quite a drive through NASDTEC to get away from the credit-counting and straightjacketing influence on teacher education that many of them also deplore. What they are trying to move toward is a situation in which a State department of public instruction will say to any college that prepares teachers: "You work up the program that you consider will turn out a good teacher. We will take a look at it and, if we are convinced that it is a worthwhile program and meets certain broad minimum requirements, we will certify a person on your recommendation without looking at his transcript." This is the way it works, for example, in our State of Iowa, and I am sure it does in other States.

Financial Support for Education

You might consider the question of financial support irrelevant in a discussion of honors. Yet as we try to attract students into honors programs in teacher education, there is going to be difficulty unless we can give them fair assurance that in the schools they will have the kinds of working conditions that make it possible to carry on at an intellectual level consistent with honors work. Some professors say they just can't honestly recommend that students go on into high school or elementary teaching because they are going to be frustrated, they are going to have too great a load, are not going to have the necessary materials to work with, are not going to be allowed freedom, and so on. To the extent that this is true, a group of this kind, if it is sincerely interested in honors and wants honors programs to be operative in and to have an effect upon elementary and secondary school teaching, ought to take cognizance of how to get the conditions in the schools that will make this possible. I suggest to you that one of the main

things is simply the question of whether or not we in this country are going to support our schools in such a way and to such an extent that there can be the right kind of working conditions for really excellent teaching and learning. Granted adequate support, the way would then be paved for the kind of honors programs in which we are interested.

The fact is, however, that we do not make ourselves in this Nation invest enough in education. It is true that expenditures for education have more than doubled in the last 10 years. But actually we have not increased the proportion of our gross national product per pupil in that time. We are spending about 3.5 percent of our gross national product on formal education at all levels—elementary, secondary, higher education, public and private. This is up about half a percent in the last 10 years, but enrollments have risen equal to that. Thus the proportion of our resources per pupil that we are investing in education has not increased. We had better recognize that we are talking through our hats when we talk about real excellence in the schools and the kind of thing we envision when we become most rhapsodic about honors programs, unless we are willing to invest a considerably greater amount than we do now. We ought to double our national investment in education.

It would be my guess that we're not going to do a really better qualitative job until we recognize this squarely. I would suggest that a group such as this might have some influence since it would be thought not to have quite so obvious an axe to grind as do a group of administrators who are always running with their hats in their hands trying to get money. There is a moral obligation on the part of scholars to speak out if they find, as I think you have, that their dreams of increased excellence through a particular kind of program, in this case the honors program, are frustrated by lack of adequate support to bring about the kinds of conditions which will make them realities. Until we educators and scholars recognize the relationship between support for the schools and excellence, we can't very well expect the public to see the relationship. And unless and until they see that relationship, they will not increase the investment in education.

Evaluation

Research in the field of teacher education is full of studies of opinion. We call them studies, but they are just opinion polls. People try this or that. Then some "researcher" writes around and asks them whether they think it was a good idea or not, i.e., how they *feel* about it. Or they may ask, how should honors programs be set up, or who should do the advising, or whatever it is. They count heads and if they find that more say "x" than "y", then "x" becomes the recommended procedure. In most cases, we have pitifully little evidence that a particular procedure is better than another. This is characteristic of teacher education at the present time; but I would hope that honors programs, which put scholarship and a search for evidence and the method of inquiry at the very pinnacle, would be characterized by much more careful search for evidence based on results obtained, not just on how people feel about their procedure. This would be a tremendous contribution in itself, but, as Dean Stiles says also, you've got to go beyond the question of whether or not the students taking honors work in college make good grades on tests or in some other way impress their professors.

In honors work for teacher education, we are challenged to be able to demonstrate in some way or other that honors make a difference in teaching. This really is difficult. We have to admit that we've done very little head-headed research on the criteria of competence in teaching. We need to study what is learned by children, comparing those taught by teachers who have had the experience of honors work and those who have not had this experience. We must recognize that it isn't enough just to show that the teacher who had honors did a good job.

What must be demonstrated is that honors teachers do better jobs than comparable teachers who did not have the honors work. If you siphon off the very cream of the crop and give them honors programs, they are going to be capable but they would naturally have been capable in the traditional program as well. The challenge is to find out whether or not in actual fact this experience led them to perform more capably than comparable people without this particular experience. I would hope that this would be recognized as one of the obligations of the persons sincerely interested in honors work.

Conference Follow-up

The American Association of Colleges for Teacher Education, of which I am president this year, is a good vehicle for presenting the idea of honors programs to the profession. The institutions that belong to AACTE prepare most of the teachers in this country. So if there should be honors experiences for prospective teachers, then we have a responsibility to take a good hard look at this and see if we cannot work it in as part of the AACTE program.

Appendix B. On Honors in Practice Teaching

Mr. Strong's statement that he himself did not see how the honors approach could be applied to student teaching was immediately challenged in the discussion following his address. The debate continued throughout the conference, and the following verbatim report presents some of the significant observations on the nature of honors work and suggestions for procedures in honors teaching. (See appendix C for identification of participants.)

Mr. Richardson (Ohio State) began the debate with the pointed question "Would Mr. Strong exclude the fine arts from an honors program?"

Strong (California): Fine arts, music—no, of course not. I see how the question is loaded. In any properly organized department of fine arts there are three kinds of courses: (1) courses in art history taught by art historians; (2) courses in the understanding or appreciation of art; and (3) courses in painting. I find myself at a loss to see how this third kind of course would be in an honors program as such. I would expect very able students to be in this course, and in a way you might identify creativity of these students. There are students, of course, with a flair for handling materials who are not scholars. A great mistake we make in any department of art or music is not to have the creative activity being practiced by the students so that they get some idea out of the experience, but I do not consider this to be something *substantive*. It is part of the *experience*. So I answer your question by saying, in the way I have already answered with regard to education, there are two tasks which fall within and the third that falls without.

Smith (Minnesota): While we have excluded from our definition of honors the performance aspect of teaching or of art or of music, we still have the question: What constitutes excellence in the arts? There are some students who attain the highest level of excellence in the creative sense, but are not able to perform at the same level of excellence in art history and art criticism. Are we going to limit our definition of honors work, then, to the kind of work that is recognized traditionally as academic excellence? Or are we going to try to give some kind of recognition to excellence in artistic creation? What are we going to do with the highly creative artist who simply will not fit into the traditionally defined honors program, yet certainly belongs in the honors category in some way?

Strong: If you're talking about the virtuoso, the performing artist, I'm not entirely sure that that individual is best spending his time in the college or university. Perhaps he ought to be in art school or a conservatory of music. In other words, in the university we treat practice as a part of the experience that goes along with appreciation, with history, and so on.

Let me give you an example of the distinction I want to make here. In some institutions there are courses given in stenography and typewriting. More and more these courses are now given in commercial schools rather than in the college or the university, but when I was an undergraduate there was a department of commerce which eventually became a school of business administration, where a student took for credit a course in operating a typewriter. When I went to the university, my father laid down two requirements that I had to meet as a condition of getting support: One was that I learn to operate a typewriter, and the other was that I didn't go into law. (He was a lawyer.)

I wanted to learn to operate a typewriter, and the easiest way to do that was to take a course under an expert. I could have taken a course in the college of commerce. The credit, however, would not apply to the bachelor of arts degree. But I could also take a typing course in the department of psychology!—a course in learning. I'll tell you why the professor gave the course: He was an expert in learning theory and was convinced that the college of commerce was engaged in a time-wasting, inefficient method of teaching typewriting. He went over there and said, "Won't you set aside some of your students so that I can work with them? I would like to test this method which I think is a much more efficient one for acquiring a skill over against your outmoded and inefficient approach." They said, "No."

As a result, at his next class in learning he said, "I want each of you to have access to a typewriter after one month." I took that course. We started reading about learning. Then he divided the class, half doing it one way, and half another. He was, of course, getting research out of this and we were learning to type. I also learned a lot about learning, not from hitting the typewriter, but from doing that in connection with the study of learning. A course like that is entirely qualified for an honors program if it is set up with very superior students interested in psychology. But as for a course in training to be skillful in hitting the keys, if it were just that, it would not be a course for an honors program.

Now you may say, "The difference is great between working on a canvas and hitting typewriter keys—one is creative and the other mechanical." I don't think that the difference is sufficient to bring painting itself into an honors program.

Richardson: We don't want to see practice teaching equated with skills in typewriting. We like to think of student teaching as being a point at which there is creativity, at which there is growth, indeed at which philosophy—the philosophy of education—becomes the substance. It is at this point that some of us, at least, are disturbed by your willingness to write this off and say that here there is no place for honors.

Stiles (Wisconsin): Related to this I should like to ask if there is not a danger that if we separate the practice of teaching from honors we shall have honors graduates who nonetheless are poor teachers. Perhaps Mr. Jarrett would like to talk on that since he spoke of other dangers.

Jarrett (Western Washington): I do not doubt that this is a danger. It is one I suppose that we confront under any circumstance, and indeed it happens all the time, honors program or no honors program. The principal import of the question is that, whenever we develop an honors program within a teacher preparation program, we must be careful not to neglect the more practical aspects. We must not content ourselves with mere brilliant theorizing about

education and suppose that it can replace the homelier, and perhaps finally more important, tasks of learning how to teach. Theory and practice should go together. I would think of it not merely as a utilization of practice in the field of theory, but I would want to argue that there is the return passage, too. There is a sense in which some of the most exciting ideas might actually be engendered in practice and, being witnessed by a supervisor, be brought back into the discussion for analysis by the students who are able to handle that level of sophistication.

Shepard (Michigan State): Mr. Strong, what are your reasons for not regarding courses in practice teaching as appropriate for honors?

Strong: Any skill or any art of practice is something that can be taught. It can be taught in part by example. It can be taught by watching another perform and indicating where he is not doing the job well. It is subject to analysis. Thus the way you learn to teach is by teaching, but you do this much more effectively under supervision with criticism and analysis going on. In this sense I wasn't saying for a moment that this isn't work that is worth doing. I am, however, talking about the composition of study that in my conception makes up an honors program. I am setting off that which has to do with coaching for a skill (and there is no more important skill than teaching) from substantive study where you are concerned with the inquiry into ideas. If I were asked to say what the content is of an honors course I would say it is inquiry into ideas. If you show me that what is involved in learning to teach is an inquiry into a body of ideas which has a literature, which has a fund of something that can be analyzed, then you've captured me. But until you've shown me that I still must raise the question.

Jarrett: I'm a little bit disturbed by Mr. Strong's sharp distinction here between theory and practice. If a good student teaching program is always accompanied by work in theory, for instance by a seminar in learning theory, perhaps in the methodology of a subject matter or even a more generalized methodology, I don't see why it would not be possible to use the actual performance of students in the field as the basis for a kind of substantive criticism. It would utilize the theories that were being engendered in the seminar in such a way as to carry out a distinctively different program--the criticism of practice. This could be as exciting and as involved with ideas as anything you would find in the pure theory taken just as such. I don't see why this shouldn't in fact be done. I don't say that it's commonly done; I think it's relatively unusual. This will not, of course, replace the individualized coaching or supervision, but that has its parallel with the tutorial aspects of other kinds of honors programs. Even at the level of the seminar that accompanies the student teaching there could be engendered an intimate relationship between theory and practice that would be an inherent part of a well-developed honors program in professional education.

Strong: I couldn't agree more. That's just my point. If you have an inquiry where practice is the confirmation of a theory or a hypothesis, then you have given practice a substantive content. Where your practice is art and the experience you gain gives you an understanding of principles of composition, then the two are not isolated. But if practice is separated off by itself without this relation to the theory or ideas involved, then it lacks the necessary ingredient for an honors approach. In this sense nothing that comes within the purview of work in the school of education need fall outside of honors. I tried to say that when I said that in developing your honors program, if you set aside the train-

ing task as a special category, nevertheless that task can be enlivened, can gain a significance, if it relates to what is being done in the theoretical studies. Practice can provide the evidence for testing hypotheses, for showing a cliché for what it is—just a cliché. When you are devising an honors program you must always see that the student is intellectually engaged. If he is a very bright student and if you don't engage him intellectually, you're going to bore him, and if you bore him you're going to lose him.

Cohen (ICSS): Does your position apply to the widely held view in our culture that in the approach to the arts you must not contaminate creativity with talk?

Strong: Yes, that's right, because no amount of discourse about art communicates what the painting itself communicates. Therefore you don't convey in words what the painting conveys. But how to look at a picture is a subject for an honors course; painting a picture as such is not.

Borrowman (Wisconsin): This does not fit our way of viewing things. We would like to think that we can ask the professors responsible for any aspect of the education of teachers—whether it be the liberal arts aspect, the history and philosophy of education, educational psychology or the supervised experience—to conceive challenging, stimulating, and distinctive ways of handling bright students in those particular fields. It seems quite clear to us that the type of thing that would be done in a methods course or in a supervised field experience would certainly be quite different from that appropriate to a course in history itself. If one wants to define honors as involving the kinds of activities that are provided in a course in history, then I would be willing to agree with Mr. Strong that you can't have honors in the applied fields. On the other hand, we would like to think that there are ways of handling gifted students in the applied fields. We rather hope that the professors who are responsible for supervising the internship programs or the apprenticeship system will find activities that are appropriate to bright students working in those areas and different from those that are appropriate to less talented people. We are inclined to think that if students in these areas do an unusually fine job that really challenges and excites them, we ought to recognize them. We are, therefore, going to call distinguished and imaginative work in teaching honors and give credit for it. We hope that the standard common to all honors will be based on the quality of the challenge.

Strong: The point that I am still puzzled about is to see how one would gather together a group of superior students in an honors colloquium or honors course where one is concerned with method in relation to practice teaching. A number of you have pounced on me for being obtuse, or being too puristic, or being too much in letters and science and not having enough vision. So here's my question: some of you have honors programs in departments or schools of education. I have not yet heard from any of you just what constitutes your honors course or your honors colloquium in supervised teaching. In specific terms, what is the honors work that you do, if you do it, in those courses?

Stiles: I think it's only fair to say that the reason you haven't gotten an answer is because we don't have one.

Clayton (Syracuse): We're not yet doing it, Mr. Strong, but we're currently working on it. This has been our planning year for a special program in which four universities in upstate New York—Cornell, Syracuse, Rochester, and Buffalo

- are working together on a new program for superior teachers. The practical phase of the program will include an internship experience in the senior year, in which the students will do full-time teaching for one semester in a public school. These public schools are carefully selected to see that they are places in which change is going on, where especially the method of inquiry is a fundamental part of the teaching. We are selecting specific teachers in these schools to work with these superior students and potential leaders. We hope that this experience with selected teachers in selected schools, in a carefully designed, cooperative and carefully thought-through program will have the quality of honors work in the practical situation. We hope that we can find some evidence that the people who go into this program are potential leaders in teaching. It seems to me that, when you get the best students working in the best schools with the best teachers in the best programs we can devise, this is honors quality.

Marsh (Illinois): I can conceive of an approach in which an honors student might study the history of the various teaching techniques from those of Confucius and Buddha on down, and then try out these various procedures. He would seek to find out under what circumstances certain techniques work and when a shift to a different technique is needed in order to adapt to the needs of the group and the circumstances. Of course, this would be a difficult thing to do, but couldn't it be done as honors work in teacher training? It could include both practice and method in an historical, philosophical, experimental orientation, and would be quite a fascinating thing.

Drummond (New Mexico): Admittedly, a course in any field can be a miserable experience for a bright student if the teacher is a miserable teacher; but it ought to be possible, with the right teacher, to make any subject into an honors experience. Mr. Strong has challenged us to show how to do this in student teaching.

We tried this 2 or 3 years ago at George Peabody College when I was there. We said to a bright girl in elementary education, "We think you are brighter and have more promise as a teacher than most of our students, and that you can become a full-time classroom teacher in a shorter period of time. Instead of 12 weeks as a regular student teacher, we expect that somewhere between the sixth and eighth week you ought to be able to handle a class on your own with full confidence in your ability and competence to do what you expect to do. So we intend to use the last several weeks of the quarter in a different way for you. We want to extend your learning possibilities."

After 8 weeks she did get up to the level we anticipated. She then spent a week as a principal's intern, learning the problems that came into his office. She spent a week with the teacher at the grade below the grade level which she was to teach and a week with the teacher at the grade level above. She went to the junior high school and spent a week there, seeing the problems in terms of articulation between the elementary and the junior high school years.

It might have been wise, after she had spent 6, 7 or 8 weeks with a very good teacher, to have put her in a classroom for a week with an ineffectual teacher and asked her to think about the difference. This might be a fascinating way of providing an undergraduate thesis subject for honors majors in elementary education.

Fitzgerald (Boston College): As another example, at Boston College we have an arrangement which brings practice teaching into the ordinary collegiate undergraduate honors experience. We bring together the sophomore and senior honors

groups in a general colloquium on the problems of education. The seniors act as guides or tutors for the sophomores and conduct the colloquium.

Wynn (New Mexico) : I do not think the conference has settled this issue to anyone's satisfaction. The argument was bound to end inconclusively. At a brief conference so crowded with other problems, we could hardly expect to resolve the broad issue raised by Mr. Strong: What is or is not intrinsic to an honors approach, whether in the liberal arts, in professional education, in other professional fields, or in the performing arts? Nor could we do justice to the profound implications for teaching and learning. These were given early attention in many of John Dewey's writings on the role of experience in rational and expressive development. A. N. Whitehead coped with them. They have been more recently raised by Jerome Bruner's report in *The Process of Education* and Nevitt Sanford's *The American College*.

We in honors must, in time, however, cope with them all—with the relations between creativity and intelligence; between the intuitive and the analytical; between knowing, feeling and doing; and between being and meaning.

Appendix C. Conference Participants and Executive Committee and Staff of the Inter-University Committee on the Superior Student

Hosts for the University of Wisconsin

FRED H. HARRINGTON, *Vice President for Academic Affairs*

LINDLEY STILES, *Dean, School of Education*

TERRENCE J. SNOWDEN, *Assistant to Dean of School of Education*

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WALLACE L. ANDERSON (*English*), *State College of Iowa*

CHARLES E. BISH, *Director, Project on the Academically Talented Student, National Education Association*

CLIFFORD L. BISHOP (*Education*), *State College of Iowa*

MERLE L. BORROWMAN (*Education*), *Chairman, Committee, Honors Program for Gifted Students Preparing for Teaching, University of Wisconsin*

J. NED BRYAN, *Specialist, Gifted and Talented Students, U.S. Office of Education*

WARNER O. CHAPMAN (*Government*), *Director, Honors Program, Indiana University*

*Although not represented, the following organizations have expressed support for the aims of this conference: American Council on Education, Association for Higher Education, National Council for Accreditation of Teacher Education, American Association for the Advancement of Science, and American Council of Learned Societies.

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- THEODORE S. CURRIER (*History*), *Chairman, Honors Program, Fisk University*
- BYRON DOENGES (*Economics*), *Assistant Dean, College of Arts and Sciences, Indiana University*
- HAROLD D. DRUMMOND (*Elementary Education*), *University of New Mexico*
- PAUL W. EBERMAN, *Associate Dean, School of Education, University of Wisconsin*
- JOHN S. ELLIS, JR. (*English*), *Chairman, Honors Council, Winthrop College*
- A. MARTIN ELDERSVELD, *Dean of Instructional Affairs, Grand Rapids Junior College; Observer for American Association of Junior Colleges*
- FRANK ENDICOTT, *Education Department, Northwestern University, Vice Chairman of the Commission on Research Service; Member of Committee on the Superior and Talented Student Project, North Central Association*
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